ESTABLISHED 1819.

THE AMERICAN FARMER RURAL REGISTER.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

NEW SERIES.] AUGUST, 1872. [VOL. I—No. 8.

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VOL. I.—No. 8.] AUGUST, 1872. [NEW SERIES.

THE MANUFACTURE OF WINE

The result of the harvests this season, will furnish additional proof of the necessity of availing of other sources of production than the raising of the cereals, especially in the Middle and Southern states—and if we appear too frequently to present to the readers of the *Farmer* the consideration of this subject, our excuse will be found in what we consider the circumstances in which we are now placed. We do not wish to be understood as indicating a desire to dispense with the raising of those crops to which we have heretofore been accustomed—on the contrary, we believe that by the adoption of a better system in their cultivation, the same amount of produce can be raised upon one-half the quantity of land, and with little more than a moiety of the labor and expense—the statistics recently furnished in these pages on the cultivation of Tobacco, will prove the position, and ought to convince the planters of the old tobacco states that there is something radically wrong in their system, when they find that in the comparatively bleak localities of the Eastern states, crops are raised on one-fourth the space of land which realize a large excess of cash over that produced in this and other states—and such doubtless is also the case with wheat, corn, oats, &c., if the statistics are hunted up and examined to test the matter. We allude to these facts for the purpose of showing, that whilst we are anxious to lead attention to other objects of cultivation, we are at the same time equally desirous that the time and labor may be spared therefor from other pursuits.

We do not expect that all farmers and planters are going to take hold of each, and every one of these matters, for we know that what may be perfectly suited to the situation and the circumstances of one, may not be applicable to another—so that each is to judge for himself of his ability to avail of any suggestions which may be made. Moreover, we are always cautious in our recommendations, that no one goes blindly into the adoption of any thing new to his locality, which has not been well tested, or which, though found admirably adapted to one latitude or a particular condition of things, may not be suitable for those to whom we have specially addressed ourselves. We know that the farmers of the Middle and Southern states are not in a condition to experiment upon untried theories, be they ever so glittering and attractive—but when established facts are presented to them, and success has answered the introduction of any new and valuable article of production, which their circumstances will enable them to take hold of, then, even, do we advise that it be touched lightly, and by degrees introduced as a part of their own system, or, if need be, in connexion with others situated like themselves. We are ever eminently conservative in all our views, and have always adopted the principle of "making haste slowly," knowing the dangers which beset those "that will be rich," as they are "apt to fall into temptation, and a snare, and many foolish and hurtful lusts."

We have from time to time presented the claims of a number of objects for consideration under the conditions above stated, first and foremost among which is the Dairy factory system, so advantageously suited to our locality, and which has proved eminently successful wherever it has been introduced—next, the culture of the Beet Root, with the ultimate object of the manufacture of Sugar therefrom, which has been shown to be equally efficacious elsewhere with the first named production, and, in our opinion, should go hand in hand therewith, as each will be found an assistant to the other. Thirdly, the cultivation of various fruits for the rich markets afforded by our principal cities, as also for canning—in connexion with which the introduction of the Alden, or some other effective plan for the drying and preserving of fruits and vegetables so as to preserve them in their original flavor—this latter subject, as presented through our pages by Gen. Tilghman, is now attracting great attention in the South, and will eventually bring into market an immense amount of those productions which are now either entirely wasted or fed to stock, for which other food could be readily substituted. Then, again, there is the cultivation of Flax, which our correspondent, Mr. Henly, shows can be made a valuable addition to the products of the South—also the Ramie plant, that in like manner will be a prominent and invaluable addition to the products of the Gulf states—the cultivation of Sumac, to which we intend hereafter more particularly to call attention, and the Silk business, now looming up, will require largely of the raw material in its manufacture. These and others of the same character, are not untried experiments, but are established facts, and all of them are peculiarly suited to the regions in which our journal circulates.

The propagation of the Grape, with a view to the manufacture of Wine, is another and most important object, and it is in this direction we would now direct attention. We will some of these days get hold of the statistics showing the money value of four articles which we import into this country, viz: Sugar, Wine, Wool and Silk,—the amount of which will appear astounding, and all paid for in hard coin or its equivalent—whilst the whole could be produced through the instrumentalities of the farming interest of this country, without detriment to any other class—in the production of each of which rapid strides are making, as we have already shown, and will more clearly present in the future. The revenue from these sources alone, collected under the Tariff system, now annually pay a large slice of the national debt and the interest thereon, although the duties on the first named are hereafter abolished—but those on Wines and other liquors, and on Silks and Wool, are very heavy items paid into the exchequer for the support of the government.

Great progress has been made in the Wine business within a few years past; but the prejudice against the home-made "juice of the Grape," has to be overcome, before complete success is attained. Few in this country drink pure wine, although so large an amount passing under the name is imported—it is manufactured in the countries whence introduced, from drugs and inferior liquors, as is also largely the case, in this country—and the imbiber is deceived, and deceives himself, with the idea that he is partaking of the pure "juice of the grape;" and how few, even, are judges of it, the general taste being vitiated by the use of the vile compounds so generally drank. The greatest advance in the raising of the grape, and the making of wine therefrom, is in California, where alone over $25,000,000 are invested! Yet many other localities are equally as suitable for this business as the Pacific states—and such is peculiarly the case on the Atlantic slope, and in the valley of the Mississippi, which produce now large quantities of wine, and of excellent quality. We see it stated in the agricultural department of the N. Y. World, wherein this whole subject is ably reviewed, that the Russian Arch Duke, who recently paid this country a visit, was so pleased with some of the native wines he found in St. Louis that he has ordered a large quantity for his own use in Russia. Around St. Louis this business has grown to such an extent that an enthusiastic writer prophesies that that city will be the future Bordeaux of this continent. Further east, in Ohio, the manufacture of wine was long ago inaugurated by Longworth, and from that beginning has grown to large proportions, though the chief seat of its production has been transferred to the northern part of the State, along the warmer shores and isles of the lake. The same climatic influences which make that part of Ohio preferable for the perfect growth of the grape have given a similar quality to the

shores of the lakes in the interior of the state of New York. Here we find that the frosts are later and the grape ripens to a perfection not known at points even farther South.

From a statement before us we take the following facts, relative to the successful operation of the Urbana Wine Co., in Steuben Co., N. Y., on the banks of Lake Kenka. It was organized in 1865, with a capital of $250,000; suitable buildings were erected, and a superintendant and suitable hands from France, were engaged; having thus the prerequisites of labor and capital, they determined to put only a superior article upon the market; and from a product of still wine of only 2,400 gallons in 1865, they have gone up to 91,200 gallons in 1870. In 1867 they commenced the manufacture of sparkling wine, or champagne, and that year produced 20,000 bottles. In 1870 they increased this amount to 120.000 bottles. It will thus be seen how rapid is the increase, when properly managed. Not an unripe grape is permitted to enter the presses, and all the manipulations are conducted with the utmost care—and to such perfection has the business been carried on, that the N. Y. Wine and Fruit Recorder says that their "Imperial brand is not inferior to any champagne with which we are acquainted." This wine is stated to be a mixture of the juices from the Catawba, Isabella, and Delaware. The Pleasant Valley *Reporter* says that the Urbana Company intend to make a master piece by adding the juice of the Iona to that of the other three in their Imperial; as it is anticipated that this addition of its juice will make a wine well worthy of bearing the Golden Seal, so well known as one of the characteristics of best French champagnes.

But it may be said that the establishment of manufactories of wine, of beet sugar, of silks, &c, require capital, and concentration of effort, which it is not in the power of farmers to extend to them—this is true at the present time, especially at the South, but this will not always be the case—and the most we can expect to see accomplished at the present time, is the *gradual* preparation for the future "good time coming," and when the raw material shall have been so increased as to render capital available, money will not be wanting to accomplish the desired object, and as shown above, but very few years will suffice to see the business enlarged to vast proportions. We noticed recently, that enterprising citizens of Baltimore, who have amassed fortunes in the canning of fruits, &c., are branching out their business, one company on the Eastern Shore of this state, and another in one of the West India islands—and so it will, in due course of time, be the case in the matters upon which we have been treating—and we anticipate realizing in our own day, the full fruition of our hopes, in the establishment in this and the neighboring states, of some of the objects which we have so urgently pressed upon the attention of our readers.

In conclusion we would say, that no possible detriment can accrue to any, in following out our suggestions in the spirit in which they have been given—every cent expended in either branch of business recommended, is sure to be returned with manifold interest—the beet root for sugar will be a blessing to your stock of all kinds—the cows for the dairy always have a ready sale for their produce whether of milk, butter or cheese—the sheep have their annual clip of wool constantly in demand, and their regular supply of lambs, which if brought in early ever command a good price—the cocoons of the silk worms, fed upon the Mulberry, have now a ready market waiting for all that can be produced in the manufactories established and rapidly multiplying, and the demand for the luscious grapes is always great, and when not convenient to be sent to market, they can be preserved and packed away for a future or a distant market.

THE WEST vs. THE SOUTH.

In recent numbers of this paper it has been suggested to the capitalist, as well as the man of small means who wishes to locate on a farm convenient to markets and enjoying all the advantages of civilization, that the cheapness of lands at the South offer at this time far greater inducements than any that can be procured at, what may now be called, the West. We refer again to the subject, for the purpose of adding to the testimony before given, the experience of actual settlers, detailing the trials and labors through which they have had to pass, and in effect, advising those in the East to stay where they are, rather than subject themselves to the sufferings and disappointments which are apt to overtake them in the new settlements. One of these

writers, it will be seen, is in Michigan, a state which, like Ohio, has been classed as a *new* state, but is already being placed in the same category with those of the Middle or Southern Atlantic, in being already exhausted of its natural fertility, and it is now found necessary to supply commercial fertilizers to obtain paying crops in both Ohio and Michigan, neither of them producing breadstuffs much more than sufficient for home consumption. In this connexion, therefore, it is to be considered by those who emigrate to the far West with the hope that, although they may labor and toil, and suffer privations to the end of their own lives, yet their children may be benefited eventually with a large domain, whether they will not in reality leave them an exhausted soil, no better than that now to be found in the South, and with less facilities for improvement, and greater disadvantages in reaching a market for their productions.

Our object at present, however, is mainly to present the facts offered by settlers at the West, and to refer, at the same time, to the communication of Mr. Henly, in our June number, as to the effect of such information abroad, whence we wish to attract immigration of a better class, to purchase and settle upon our surplus lands.

The first is from a letter from Mr. *F. M. Holloway*, of Hillsdale, Michigan. After showing the damage to which the settlers are exposed in that region, by the storms, &c., he adds:—

"To any one conversant with this broad expanse of territory, its storms of wind and snow, its hail and sleet, its rain and sunshine, the fact is well known, that not one snow-storm in ten years comes without the accompanying high winds, and before it ceases to fall it has been carried safely to the lee place, either the woods, deep ravines, or behind fences, and the wheat field presents the apperance of a sand-bed or newly turned-over summer-fallow. In case the snow falls with a mild, damp atmosphere, as it sometimes does, it is invariably followed by rain or freezing into a heavy coat of ice." * * *

"We have learned that under ordinary circumstances it costs just about fifteen dollars to take an acre of sod ground, fit it, seed, harvest and market the crop, and that ordinary culture will only bring about this average—that our per centage must be made by hard knocks and plenty of them, combined with the best common-sense management. We are compelled to discriminate carefully in the constituent elements of our soil, to use many fertilizers, to know when, where, and the kind to apply to any given locality."

The second case, we copy from the N. Y. *World*, the Agricultural editor of which, in publishing it, remarks:

"We very much doubt if any Northern man desiring a new home can do better than go South and buy at cheap rates some of the so-called worn-out lands. They are certainly nearer to a market, and are no more worn out than a majority of the four-year-old farms in the West, and we hope that this statement of the Missouri question may meet the eye of some restless son of the South and cause him to stay at home and improve his soil by deep ploughing and home-made manure, rather than seek for a paradise which does not exist."

The following is the extract alluded to, as furnished to the *World* by a farmer who has settled in Wisconsin. He says:—

"I often see the Far West extrolled by the correspondents and speakers. I know whereof I affirm. Poor men with families cannot commit a greater blunder than to go to distant prairies. For the past two years there has been, and there still is, terrible suffering among the poor settlers in all the new States. I think if we could know of every instance where poor men, or men of small means, have been totally ruined and beggared by going West and investing their all in part payment for railroad lands, and being obliged to forfeit or sacrifice to get means to get away, the number would exceed that of those who have bettered their condition by the same change. With $1,000 to $2,000 capital the change will do; but with less a man had best stay where he can get daily wages for daily service. A large crop of corn sounds nicely to tell of, but what good if a man cannot make good wages at marketing it after he has grown it? I grew six acres of good corn in Missouri the past year, and the nett receipts were to me between $5 and $6 and out of this must come interest on land and taxes. Missouri is a fine country, and if I had $4,000 I would go there, but with less than $2,500 I prefer Northern Wisconsin. The Hannibal and St. Joseph Railroad, with all their advertising, have not forty acres of fair farming land for sale, I think, for less than $17 per acre; while all good locations are held at $20 and $25, and this with not a stick of timber."

We have also a letter from Kansas, from a Pennsylvanian, giving a still more dolorous account of the hardships attendant upon the poor immigrant's settlement in that region, which however we must reserve for another occasion.

The Value of Ammonia.

In the Scottish Farmer, a Mr. Tool gives the result of sixteen experiments with Potatoes, using a variety of manures, and on some of the plots applying no manure. We give the most striking of the results:

Plot 1 yielded, large and small, 9 tons, 5 cwt. on ¼ imperial acre.

Plot 16 yielded, large and small, 9 tons, 6 cwt.

The above had each applied to them 16 loads stable manure, 2 cwt. sulphate of ammonia, 3 cwt. dissolved coprolites (petrified dung of carniverous animals) and 2 cwt. kainit.

Plot 2 yielded 6 tons, 11 cwt. on ¼ acre.
" 15 " 6 " 14 "

These had applied to each 16 loads stable manure, alone.

Plot 5 yielded 12 tons, 3 cwt. on ¼ acre.

This plot (5) had applied to it 4 cwt. sulphate ammonia and 4 cwt. dissolved coprolites.

Plot 6 yielded 6 tons, 6 cwt. on ¼ acre—it had applied to it 4 cwt. dissolved coprolites and 4 cwt. kainit—yield, one-half of No. 5.

Plot 3 yielded 5 tons on ¼ acre.
" 7 " 5 " 4 cwt. on ¼ acre.
" 11 " 5 " 3 " "
" 14 " 5 " 4 " "

These 4 plots received no manure.

Plot 4 yielded 10 tons on ¼ acre—had applied to it 2 cwt. sulphate of ammonia, 4 cwt. dissolved coprolites and 2 cwt. kainit.

Plot 8 yielded 7 tons, 18 cwt. on ¼ acre—the application to this plot was 4 cwt sulphate of ammonia and 4 cwt. kainit.

Plot 9 yielded 9 tons, 9 cwt.—with 2 cwt. sulphate of ammonia and 4 cwt. dissolved coprolites.

Plot 10 yielded 8 tons, 18 cwt.—with 4 cwt. sulphate of ammonia.

Plot 12 yielded 5 tons, 6 cwt.—with 4 cwt. dissolved coprolites.

Plot 13 yielded 5 tons, 5 cwt.—with 4 cwt. kainit.

"The sulphate of ammonia contained 24 per cent. ammonia; the dissolved coprolites, 26 per cent. soluble and 5 per cent. insoluble phosphates; and the potash salts, 24 per cent. sulphate of potash. The manures were sown in the drills, the potatoes planted, and the drills split in the usual way. The after cultivation consisted of hand and horse hoeing, and, finally, earthing up."

The soil was of uniform quality, a good clay loam, in a very moderate agricultural condition, with a subsoil of light sandy loam. The diseased tubers were rather greater with the barn-yard manure plots than with those to which artificial manures were applied.

The result of these experiments must be of much interest to the observant farmer—almost the exact calculation can be made of the advantage of each of these several prominent fertilizers, and also of the effect of each over the product of land not manured. The uniformity is remarkable, and if the farmer could only be sure of obtaining the amount of the valuable constituents in each lot purchased, farming could almost be reduced to a mathematical demonstration—bating extraordinary seasons.

Discussions at the London Farmers' Club.

At a meeting held 6th May, some sharp shooting appears to have been indulged in by the "practical" members against the *scientific* gentlemen who are conspicuous in England in proclaiming the discoveries of chemists in behalf of agriculture. We do not intend to follow up the discussion, but merely to present some views which are important to agriculture everywhere, as offered at this meeting.

Mr. Read, M. P. asked:

"What had science taught the farmer that he did not know before? He called on Prof. Voelcker to say what results chemistry had told the farmer that he did not know twenty years ago? He acknowledged that "science had explained the *causes*, and most interesting, entertaining, and profitable that explanation might be; but at the same time, had the farmer not known that the rotation of crops, even from the time of the classic writers, was necessary? Had they not known, before the days of Arthur Young, all the advantages of clay-burning, which now seemed the newest hobby at Tiptree? [Mr. Mechi's farm.] Had they not known that oil cake manure was the best; rape dust, guano, and even the more modern introduction of what used to be known as saltpetre? However valuable they might regard science as an adjunct to the farmer, they must not suppose it did more than tell the farmer the causes of all the results which he had long ago made out by practice."

Sundry other flings were made, which we must pass over. Dr. Voelcker, in reply said:

"He felt bound to make some defence on behalf of the science of agriculture, against the not very flattering remarks that had fallen from Mr. Read. He felt that a great deal had been done for the farmer, by scientific men, a great deal was being done, and a great deal of useful work lay before them to do in the future. It was, however, a bad plan for a man to blow his own trumpet, and he did not like to stand there and blow the trumpet of science against practice; but he hoped some one would take up the cudgels against some of the views expressed by Mr. Read"

Dr. V. added, that the case in point about Mr. Mechi's burnt clay struck him as a forcible illustration that science was of a real practical value to the farmer. It was stated that in some cases the burning of clay did not improve it, while in other cases it effected a very great improvement. Science now, could enlighten them on this very point, "for it told them from time to time whether or not the fertilizing elements were developed and rendered valuable by burning. Mr. Mechi's clay abounded in silicates of potash and soda in a locked up state, phosphate of lime, and other elements which, on burning, were rendered extremely useful for vegetation. The land had the name for being very infertile, which,

in its natural state, was sterile, and which, nevertheless, contained abundant stores of plant food."

"That land (added the Dr.) needed burning and the application of lime, and especially to be worked by the steam plough, which he strongly advised Mr. Mechi to make use of, and then he need not be afraid of exhausting his soil. Some land might be exhausted in a very few years, but Mr. Mechi's stiff clay would stand very heavy cropping for a great many years with an occasional dressing of the somewhat despised guano. Mr. Mechi, if he cultivated deeply his clay land, would find nothing more profitable than Peruvian guano, which was especially rich in ammonia, and the richer in ammonia it was the more profitable it was on these stiff clays. He had no fear of the exhaustion of land after a time where the guano was constantly applied. It had been asserted that guano was exhaustive to certain lands; he had made every enquiry, and he could not find it so. He always found the more guano the heavier the crop, and he had not found an instance of land exhausted by it. (Hear, hear.) He had much more fear of the exhaustion of the supply of guano than of the exhaustion of the land. It was, indeed, a very serious question what they should do when the guano failed them. They would then be thrown upon the use of nitrate of soda, and it was as well that they should begin to see to what advantage nitrate of soda could be turned. There was great danger in using nitrate of soda injudiciously, for if there were not the mineral elements in the soil to build up the plant, nitrate of soda would do no good. It was like plying with the whip a horse whose strength was gone. He had had opportunities of seeing the unfortunate influence of nitrate of soda on poor soils. At the same time it was a valuable assistance in conjunction with other manures—phosphatic manures and potash salts. He did not altogether agree with Mr. Mechi on some of the chemical points upon which he had touched, nor did he agree on all those points with Baron Liebig. There was not a shrewder or more intelligent philosophical mind—and at the same time a good, practical mind—than that of Baron Liebig. He was a man of very powerful perception, and if he had had the advantage of only a year or a couple of years' experience in this country he would have been the first man to modify many of the views he had expressed in rather strong language. And one of these points was with regard to the manuring of subsoils. (Hear, hear.) He (Professor Voelcker) would say to the farmers: "Don't manure subsoil of any kind, light or heavy; manure the topsoil, and keep the manuring elements as near as you possibly can to the surface, so that the young plant may derive immediate advantage from the food prepared for it."

We give these views for the present, not doubting that some of them (especially upon the exhaustive effects of guano,) will fail to meet with the approval of the farmers of this country.

Prof. Voelcker on Manuring.

The remarks made by the learned Professor of the Royal Agricultural Society of England, on the subject of ammoniacal manures, will attract no doubt the earnest attention of the farmers of the U S. His views upon another subject, in the same discussion, which is reported in *Bell's* (London) *Weekly Messenger* will perhaps elicit still greater surprise than those about guano. He appears to take the broad ground, that "*it was not possible permanently to improve the fertility of the land*," and that "to manure with a view to the future, was, in a great measure, all moonshine." If the Professor alludes merely to the use of the ammoniacal manures, then his remarks may have some truth to bear him out; but if he intends to include *all* manures in the term "fertilizing elements," the experience of all farmers who have used pure phosphate of lime, and perhaps other similar manures, contradicts the assertion. His remarks may, however, be taken in a qualified sense. We quote the passage as reported:

Mr. C. S. Read: Do you agree with Mr. Mechi that it is impossible to manure the subsoil through the topsoil?

Professor Voelcker: I decidedly think that Mr. Mechi is wrong in that. The subsoil can be manured to a certain extent through the topsoil. And it is as well to bring up a little of the subsoil and get back the elements of fertility which have sunk down through the topsoil. This reminded him of certain facts which showed how careful we ought to be in generalizing from what he would call half-understood facts in agricultural chemistry. It was very natural to make that mistake when a discovery was made, because we did not know the full extent of the facts involved. When it was discovered that plants absorbed ammonia, leaving the sulphuric acid to pass through the soil, it was thought that fertilizing elements might be stored up in the soil and the soil become permanently enriched; but then it was not known how rapid were the changes which ammonia undergoes in the soil. It was a mistake to suppose that ammonia would remain permanently in the surface soil. It would get rapidly washed, in the shape of nitric acid, into the subsoil. *Fertilizing elements* could not be permanently stored up in the soil. *It was not possible permanently to improve the fertility of the land.* The best thing the farmer should expect, after applying artificial manures to the land, was a heavy crop, and not to look forward to profit by the ultimate improvement of the soil Fre-

quent manuring was the most profitable mode of procedure, *but to manure with a view to the future was, in a great measure, all moonshine.* Unless they saw their money back which they expended in manure in the weight of the crop to which the artificial manure was applied, they had better keep their money in their pockets. If the manure was not utilized at once it passed, in a great measure, into the drainage water, and he was not at all sure that there was not more fertilizing matter lost in the drainage and carried away than ever passed into the crop.

Our Agricultural Calendar.

AUGUST—FARM WORK.

Harvest being now over, the farmer will find plenty of other employment for himself and hands, in the several departments of his farm economy, some of which we will proceed to notice.

Threshing Grain.—The yield of the crop of wheat, is undoubtedly short of an average, and the rates at which it is now selling on Change, should induce those who can hold off, to defer getting their crops into market in a hurry—there can be no earthly reason why the price should not be higher, as the results of many a crop will be found like that of Mr. Gilmer's as stated by that gentleman on another page. In his section, before the grain was cut, the expectations were much better than in most others, but the half bushel, that surest test, will prove, that the hopes of many, as to the improved condition of the wheat during the month preceeding its being harvested, have not been fully realized. It is a delicate thing to tender advice, but our candid opinion is, that *this is not the time to force the Wheat crop into market*—there will be many who will be forced to sell promptly, in order to meet their engagements, or to provide for their necessities, and to such "necessity has no law"—but to those who can consistently hold on, we think there can be no risk in doing so. Every one, however, must judge for himself, as each has a better knowledge, by instinct if you please, of what is best suited for his individual case, than any one else can advise—we speak as of a general rule, to which of course there are always exceptions. Before we go to press, we may be able to obtain more specified intelligence to communica e to our readers, who may rest assured that we shall be ever found on the alert for their interests.

Whilst we would not recommend an early shipment of grain, yet as soon as circumstances will admit, it will be advisable to have your grain threshed out and ready to enable you to avail of any rise in the market to sell.

Granaries.—The floors as well as the sides and ceilings of these should be washed with hot ley, and whitewashed, before you store away your grain. A plan adopted very largely in this state to get rid of the *weevil* is as follows: When the granaries are clear of grain, place powdered brimstone in an earthen pan, which for safety is put on the floor in a bed of sand; close doors and windows, and fire it—the smoke either destroys them or drives them off. The sweepings before cleaning and whitewashing, should be carefully taken up and burnt, and not left out of doors, or in the vicinity of the bins, to breed millions of insects to prey upon the next year's crops. In our last, we gave some recipes for destroying *rats*, and add to the number the following: give them two or three messes of fresh fish, of which they are very fond, without any poison on them, then scale two or three dozen fish and sprinkle *arsenic* over them, which the rats will eat with avidity, and thus receive their quietus.

Turnips.—We have already treated on the cultivation of these in our June and July numbers. There is still time however to sow them, up to the 10th or 15th of this month, but the nearer the 1st of the month the better. Though not considered, in themselves, very nutritious, Turnips make, when mixed with long provender of any kind, a valuable addition to the food of Cattle, and with the present short hay crop, will be an excellent adjunct in carrying your stock through the feeding season. The short time it takes for turnips to mature, makes it necessary to supply them with ample food, both organic and inorganic. Of the former, stable or cow yard manure, half rotted down, or sheep dung, or any other strong nutritive manures, will answer, at the rate of 20 loads per acre.—Of the inorganic manures, give to each acre 5 bushels (or more) of bone-dust, 10 bushels ashes, 2 do. salt, and 1 of plaster, to be well incorporated before being applied. It may be useful to give the analysis of the ashes of the roots and leaves of the turnip. In 10,000 lbs. of ash there will be found—

	Roots.	*Leaves.*
Potash	23.86	32.3
Soda	10.48	22.2
Lime	7.52	62.0
Magnesia	2.54	05.9
Alumina (clay)	0.36	00.3
Oxide of iron	0.32	01.7
Silica (sand)	3.68	12.8
Sulp. acid	8.01	25.2
Phos. acid	3.67	9 8
Chlorine	2.39	8.7

Thus we find that potash, soda, lime, sulphuric acid, phosphoric acid, and chlorine, are the chief inorganic substances on which the turnip thrives, all of which, together with the others, may be furnished by full dressings

of *ashes*, (or potash, or kainit;) but as ashes cannot be had in proper quantities in many locations, the following compost, in quantities suitable for an acre well mixed together, can be applied as a top-dressing, and harrowed in, viz:

10 bushels	Ashes,	10 bushels	Lime,
2 "	Salt,	1 "	Plaster.

Plough deep, as the turnip has a long tap-root, which in its descent for food, should meet with nothing to obstruct it; afterwards, harrow and cross harrow to obtain the finest tilth possible, and then roll before the seed is sown, so as to produce an even surface on which to cast the seed. For further instructions we refer to previous numbers, but will add a few words more on their after culture: When the plants first come up, sprinkle fish oil over them early in the morning, while the dews are on—or make a decoction of quassia, soot and flour of sulphur, and sprinkle that over them, —or sow over them a mixture of ashes, lime and plaster. This operation must be made very early in the morning and repeated until the plants get into the rough leaf, when they will be beyond the reach of harm from flea and fly. When the plants are 3 or 4 inches high run a harrow through them; this destroys grass and weeds, and opens the soil to the influence of the dews, &c., and partially thins out the plants. Thin the plants out, so as to stand 8 or 10 inches apart, when the bulbs are the size of a walnut, at the same time clearing out the grass and weeds around the roots, stirring the ground with the hoe, avoiding the earthing up the bulbs. At the interval of a week renew the working, and repeat the operation after another week. This is labor and expense, but turnips can be made to yield 20 to 30 tons per acre, and the more money in the way of manures you put on, and the more thoroughly is your labor applied, the better will the pay be, by the large amount of food which will be thus provided for your stock—in addition to which there is an immense quantity of manure made upon the farm, wherever turnip culture is practised.

Seeding Rye.—This crop pays well, perhaps better than wheat, where it is put in under favorable circumstances, in consequence of the high price always offered for the straw, it being very desirable for bedding purposes in the horse stables. The soil, too, which will answer for this crop, is of a lighter character than that most suitable for wheat; and may be one in which sand is more prevalent; but to produce a good crop, manure suitable for the plant must be in, or applied to, the land—the soil suitable being light, the potash and soda therein are most likely to be washed out, and these are important constituents in rye. We give the following statement of the amount of inorganic matters removed from the field in an acre of rye, according to Prof. Morton:

	Grain.	*Straw.*
Silica, lbs	0.64	108.36
Phosphoric acid, lbs	8.80	6.42
Sulphuric acid, lbs	1.35	1.39
Lime, lbs	0.79	15.22
Magnesia, lbs	2.12	4.05
Potash, lbs	4.94	28.87
Soda, lbs	1.50	....
Chlo. Sod. and Potassium	...	1.38

Manures suitable for the crop, that will secure a good yield, may be thus stated:—1. 200 lbs. guano, 1 bushel plaster, mixed with 5 two-horse loads of marsh mud, or any kindred substance, to be broadcasted and harrowed in. 2. 300 lbs. bone dust, 10 bushels ashes, 1 do. each of plaster and salt, to be applied and harrowed in. 3. 10 2-horse cart loads of woods mould or river mud mixed with 150 lbs. guano and a bushel plaster, to be ploughed in, the land then to be harrowed; afterwards top-dress with 10 bushels ashes, and harrow and roll. 4. 10 loads woods mould, and 5 of stable manure or barn-yard dung, 5 bushels unleached ashes; form these into compost, layer and layer about; after lying about 10 days in bulk, shovel it over, spread broadcast and plough in, and top-dress with a bushel of plaster per acre. 5. Plough in 10 2-horse cart loads of woods mould, marsh or river mud, mixed as above with 10 bushels leached ashes, or 5 bushels unleached, formed into compost and treated as above. In the spring top-dress each acre treated with the two last formulas with 75 lbs. of Nitrate of Soda.

Preparation of the Ground.—Here let us say, once for all, that upon the proper preparation of the ground, a large portion of the success of this and almost every other crop depends —therefore recollect, that in ploughing for a crop of rye, deep-ploughing and thorough pulverization will go far to secure a remunerative crop—after the ground is ploughed, harrowed and rolled, sow the seed with care, and then harrow and cross-harrow it in—4 pecks seed per acre are generally sown, but it is better to make the quantity 5 or even 6 pecks to the acre. When this work is finished, then run water furrows throughout the field, so as to prevent the lodgment of water, and afterwards solidity will be given to them by running the roller across the furrows.

Time of Seeding.—Some prefer not seeding before the 10th or 15th Sept., whilst others think that to sow during August is most advantageous; and if there are any fears of its getting too rank, sheep or calves can be turned in on it early in the spring. This will at the same time remedy the evil, and give a profitable pasture to the young stock at a time when it will be needed. The crop of rye this season appears to have turned out much better than those of wheat, oats and hay.

Meadows and Pastures.—Timothy is best to be sown by those who have a ready market for their hay, as it is always more in

demand by horse-men and stable keepers—consequently, if you intend setting a meadow this year, you must liberally give the land rich manure from the stables or barn-yard; plough it in, harrow well, and roll; then sow 1½ pecks clean timothy seed per acre, harrow it in very lightly with a light seed harrow, and top-dress with 10 bushels ashes per acre; lay off water furrows, and finish by rolling across the furrows. Next summer, after you have cut your first crop, if you have reason to believe that your meadow needs lime, apply about 40 bushels, slaked with a strong solution of salt and water, and 2 bushels salt. In the succeeding Fall, and every subsequent one, each acre should have applied to it as a top-dressing, 4 bushels bone dust and 10 bushels leached ashes, harrowed in with a heavy harrow and rolled. Grain may occupy the land with the grass seed, but if the latter be sown alone, and sufficiently thick, the young plants will exclude the weeds and occupy the soil as profitably as can be done with the grain; but timothy is most generally sown with the grain crop in the Fall, and in the Spring clover is also sown early. Seed sowers have been introduced for broadcasting grass seed, but it requires a very careful hand to do it, and the work must be performed when there is no wind to interfere with the operation, as it cannot be performed evenly when attempted in blowing weather.

If you intend your fields for pasture and hay for your own purposes, and expect them to remain in grass for a series of years, they must at their setting have a good foundation to work on; therefore give them as large a dressing of manures as you can well afford. In addition to the organic manures recommended above for your timothy meadow, supply the following mixture, for each acre—to 10 bushels bone dust, moistened, add 10 bushels of ashes, 2 of salt, and 1 of plaster—thoroughly mix and leave it in bulk for a couple of weeks, when it should be shoveled over, the better to incorporate the several ingredients; apply broadcast and harrow it in, and roll well. The land thus prepared, sow the grass seeds, and it will be found decidedly best to sow a variety, of such as are adapted to the purpose, viz:

Sow first by itself, ¼ peck Timothy seed; th n the following additional kinds and quantities should be mixed with twice their bulk of ashes and sown together, viz:

1 bushel Orchard grass seed;
½ " Kentucky Blue Grass seed;
½ " Perennial Rye Grass seed;
1 " tall Meadow Oat Grass seed; and
3 lbs. sweet scented Vernal Grass seed.

Moisten the Orchard grass seed before mixing it with the others, and leave it in bulk from 12 to 24 hours. The seed to be harrowed in with a light one horse seed harrow; lay off the water furrows, and roll across them. This may be considered a costly operation, and so it is; but it will pay you the cost each year after the second, and it must be remembered that it is to be permanent, and, if properly cared for after it is once firmly set, will last a life time, furnishing a luxuriant crop of grass to cut every year, and pasture for your stock in two weeks after you have harvested the hay, until after frost. Every second year, there should be applied a mixture for each acre, of 2 bushels bone dust, 10 do. ashes, 1 do. salt, and 1 of plaster—spread broadcast, harrow it in well, and roll the ground.

Fall Potatoes.—The vines should be dusted once in every two weeks, early in the morning, when the dew is on, with a mixture of equal parts of lime, ashes, salt and plaster; this will not only assist in the growth of the plant, but will be a preventive of disease. Top-dressing the potato with compost earth, well rotted chip manure, &c., soon after the plants make their appearance, has been found to be of great service. The vines should be kept clean of weeds and grass and the earth between the rows well stirred, so as freely to admit the air, dew and rains.

Stubble Fields.—These, if you have to use them in place of pasture fields, would be greatly improved if you keep off your stock for a few weeks, and giving each acre a dressing of bone dust, ashes, salt and plaster, mixed with mould; let the quantities be such as are handy or you can well afford—this will give you a good fall pasture, and enhance the fertility of the land for next year's crop.

Corn.—The fields should be kept clean; let the cultivators be busy, and the earth well stirred and open to receive the benefits of the air and dews upon the roots of the plants. The rains of the past month have had an excellent effect on the corn.

Cows.—As early as you can do so, see that these are served, so that their calves may be dropped early after the grass appears to give pasture for the dam. Be sure to have a bull of a good breed to attend your cows, as the progeny will be likely to sell for more than will pay the difference you would have to pay between it and an old field scrub.

Materials for Manure.—Every opportunity and spare moment should be availed of to gather materials for making manure—these are found in every direction around and about the farm—and need only to be gathered and formed into compost heaps to become sources of profit, whilst many things, now nothing but nuisances, can be made to yield that which is "as good as gold."

Wheat.—The time for putting in this crop is yet somewhat distant, but it is not too early to begin making preparations for the work to be performed to secure success. To the great

body of the farmers of the U. S. this is peculiarly the money crop. and upon its prosperity depends whether or not the raiser of it is to be hampered in his financial affairs for the whole of the ensuing year. It is also a crop that is raised, to a greater or less extent, in nearly every state of the Union—and with the exception of Corn and Hay, there are more acres employed in its production, than any other of our crops, and is the fourth on the list in value, as will be seen by the following table of the crops of 1870:

	Bushels.	*Acres.*	*Value.*
Corn.....	1.094 255.000	38.646.977	$601,839.030
Wheat.....	235.884,700	18.992.501	245.865.045
Rye.....	15 473.600	1.176.137	12 612.605
Oats.....	247.277.400	8,792.395	107.136.710
Barley.....	26.295,400	1,108.924	22 244,584
Buckwheat.....	9.841.500	536.992	7,725.044
Potatoes.....	114.775 000	1,325,119	82.668,590
Total.....	1,743,802.600	70.579,135	1,080.091.608
Tobacco, lbs.....	250.628.000	336 668	26.747,158
Hay, tons.....	24.525.000	19.861,805	338 960,680
Cotton, bales.....	4.400 000	8 680 000	286 000,000
Total.....	.....	99.451,608	1,731,808,446

The quantity of Wheat exported in same year, 34,304,906 bushels, valued at $45,143,424; Wheat flour, 3,653,841 bbls., valued at $24,093,184—Indian Corn, 9,826,306 bushels, valued at $7,458,997—other breadstuffs make the total amount exported valued at $79,320,609. The total amount of Cotton exported, unmanufactured, was valued at $218,250,000.—Total amount of Tobacco exported, unmanufactured, in value, $20,000,000, and manufactured, $2,000,000.

These facts and statistics, from official sources, show the great value of this crop, which is not only the main reliance for the higher classes of our people, to whom it is emphatically "the staff of life," but also as an important feature in the commerce of the nation. We will therefore endeavor to present such views to the consideration of our readers, as we may deem necessary to aid them in the good work of improving their system of cultivation, and at the same time increase the product of the soil. To lay a proper foundation for our work in hand, we will first give the analysis of the Wheat plant, both of the grain and straw:

100 parts of the dried grain gives 2 per ct. of ashes;

100 parts of the dried straw gives 4 per ct. of ashes;

100 parts of the ashes contain:

	Grain.	*Straw.*
Potash.....	30.02	17.98
Soda.....	3.82	2.47
Lime.....	1.15	7.42
Magnesia.....	13.39	1.94
Oxide or iron.....	.91	.45
Phosphoric acid.....	46.79	2.75
Sulphuric acid.....	....	3.09
Silica.....	3.89	63.89

Ploughing and Preparation of the Land.—We refer to our Feb. No., page 48, and to our April No., page 118, for full instructions upon this subject, given then for the oat and corn crops, but the views expressed are, if anything, more particularly applicable to the wheat crop—to which we urgently appeal to the reader to refer.

Soil.—As a general rule, the best wheat soils are those in which there are proper proportions of clay, as adhesiveness in the soil is necessary to sustain the plant; therefore clay and clayey loams in which are to be found admixtures of clay, sand, vegetable and animal remains, are considered as the soils best adapted to the growth of wheat, and to its successful maturation. If you have the aid of green crops, such as clover, peas, &c., sandy loams will grow good crops of this cereal—and in any event, wheat sown after a clover ley, is the very best foundation you can have for that crop. The decaying matter which clover roots afford, particularly in dry climates, are best adapted for feeding the wheat plant during the long time it is in the ground An English authority of the highest character, takes a view of manuring for this plant, which have long since been enunciated, that in manuring a plant, the same principles should be regarded as in feeding animals; that no more food should be supplied than they are capable of daily digesting or assimilating. "Manures, therefore, should be of such a nature as to afford nourishment to plants during their whole period of growth; plants which do not grow rapidly, should be supplied with manures that slowly yield up their active substances—autumn sown wheat, therefore, in dry climates, is best manured by a clover sod. As a general rule, the growth of autumn wheat is most economically promoted by carbonaceous substances; such as clover roots, the refuse of the manures which have been applied to green crops, and inferior qualities of guano, which yield up their ammonia during the growth of the crop." On the other hand, the same writer says that spring crops require a manure such as Peruvian guano, because of their more rapid growth, and the ammonia in this kind of guano is more readily assimilated. The most soluble manures, such as nitrate of soda, are best fitted for top-dressing wheat in spring, for the rapidity of growth which ensues in early summer, enables plants to digest a larger quantity of food in a given time."

The English farmers have of late years, perhaps acting upon some such views as are thus above presented, adopted the principle of applying a smaller quantity of the ammoniacal guano than heretofore, with the phosphatic—but these latter varieties of guano contain but a very small quantity of ammonia in their composition—here they are esteemed valuable for the phosphates they contain, the solubility of which is generally secured by the use of sulphuric acid—making a superphosphate. The ammoniacal guano is therefore used with the phosphatic on the wheat crop in the Fall—and a sufficiency is, say one-fourth or one-fifth of the whole

amount applied—this will force the plant ahead, so as to give it a good stand through the winter, and will carry on the work it is expected to perform until the hot weather acting upon the moisture in the earth, produces putrefaction in the bone earth, which in England is mostly used for the purpose, and prepares it to give up its ammonia, and more particularly the phosphates, in time to be taken up by the plant to secure the full effects in making and maturing the grain. The analysis given above will show the large amount of phosphoric acid in the grain of wheat, reaching to nearly 47 per ct. and which is amply supplied from the phosphates, found with some ammonia, in the bones. We throw out these hints for what they are worth. Various preparations are offered in the market, which are recommended as containing a sufficiency of ammonia with the phosphates and potash already incorporated, the latter being also a very large ingredient of the wheat plant, both in the grain and straw. Ashes, however, cannot be had in sufficient quantity to supply the demand, and hence pot or pearl ashes or kainit must be substituted in their place. On a former occasion we have remarked "that in *ashes* are to be found silica, allumina, lime, magnesia, potash, soda, sulphuric acid, phosphoric acid, chlorine and carbonic acid in a word, *all* the inorganic elements required by vegetable life. In *salt*, we have soda, chlorine, and frequently traces of sulphate of magnesia and lime, and muriate of magnesia, all of which enter into the necessities of vegetable life; whereas, in lime, when applied alone, except it be oyster shell lime, we get the calcareous principle alone —therefore by the mixture of salt, ashes and lime, we insure to the wheat plants all their inorganic constituents, whilst lime applied in its pure state, dispenses but one of those constituents."

A crop of 25 bushels of wheat, it is estimated, abstracts from an acre of land 29.59 lbs. potash, 3.02 lbs. soda, 10.52 lbs. magnesia, 20.56 lbs. phosphoric acid, 10.50 lbs. sulphuric acid, 1.97 lbs. chlorine, and 16 lbs. lime. To furnish these, the following mixture will suffice, and leave besides, especially in the bones, enough of the several substances to sustain the succeeding crops of a rotation, viz:—

2 bushels salt, refuse or other kind.

4 bushels bone dust dissolved in sulphuric acid, *or*, if in a raw state, with 75 lbs. ammoniated guano; *or*, 300 lbs. superphosphate of lime in place of the bone and guano.

12 bushels of ashes, (or 60 lbs. of pot or pearl ashes.)

1 bushel plaster paris.

The manure, of which bone dust and ashes are the main bases, should be harrowed in. The materials in the formula should be formed into pie, and permitted to remain until fermentation commences, which can be determined by thrusting a stick into the pie; as soon as the bones become heated and emit an ammoniacal smell, is the time to apply them; before this is done, the pie should be broken down, and the plaster should be mixed with it.

If you will form a compost of marsh, river, creek, or ditch mud, ashes or marl, 10 loads (or more) on each acre intended for wheat, whether in grass or not, will be found a valuable manure; if the land is near salt water, salt is not so necessary, but if at a distance from the saline influences, a couple of bushels to the acre will tell well.

Or, if you use either of the above described muds, add 15 to 20 bushels ashes to every 10 loads—if marl is used, 50 to 100 bushels may be mixed with that quantity of mud.

Or, to 10 loads such mud as is designated above, add 100 lbs. Nitrate of Potash or 100 lbs. of the Nitrate of Soda—a very powerful and effective manure for an acre of wheat will be had.

The applications, except that of which bone dust is the base, should be ploughed in.

10 loads of woods' mould, and 20 bushels charcoal saturated with 50 to 60 gallons urine, will manure an acre of wheat as effectually as would 200 or 300 lbs guano, and be more durable.

5 bushels ashes, 5 do. bone dust, 2 gallons fish oil and 2 bushels fine charcoal, mixed together, will make an excellent compost for an acre of wheat.

Those who have barn-yard or stable manure, can apply it by itself, or mixed with the ashes, bones, &c., or use in place of the muds, composts, &c., recommended.

Preparation of Seed.—A soak of common salt, strong enough to bear an egg should be made, and the seed wheat soaked therein 12 to 24 hours; strain off the brine, and then place the seed on the barn floor, and mix ashes or fresh slaked lime with it, until it is all dusted over, and it is then fit to sow. Take no more seed to the field than you can sow in a day—keep it covered up, until taken out for use. The seed should be washed well in pure water, before being put into the soak.

Selection of Seed.—There is a good deal in the selection of seed—like begets like—a change is also advisable—every one can best judge for himself as to the varieties suited to his vicinity—the seed should be clean, free of all kinds of weed seeds, cockle, chess, &c. The variety called the Tappahannock, introduced a few years ago by the Agricultural Bureau, appears to have attained great success, being very early and prolific, and especially suited to the South. The reports to the Department are very uniform in favor of its great value, and in our next, we will give some of the evidences thereof. Other varieties, introduced from abroad, such as the Rough Chaff, the Talavera, and the Polish, the Bureau reports not to have answered well.

Putting in the Seed.—If sown broadcast, plough or cultivate the seed in, not less than 2, nor more than 3 inches—but it is decidedly best, in our view, to drill it in; in this case, however, the land requires to be put in better order than is necessary for broadcasting; but it takes ⅓ less seed to drill it in, as 8 pecks

per acre will answer for broadcasting, whilst 5 pecks will do for drilling—a saving of 75 bushels of seed to the 100 acres, and the seed are more equally and eligibly distributed as regards space and depth—other advantages are given in favor of the drill, to which we will in our next more particularly refer. In the meantime, we will remark, that in the last "Transactions of the N. Y. State Agr. Society," just received, we find that the Bickford & Huffman drill, advertised in our pages, received the highest award of the Society, after a most thorough trial.

Wheat should never be sown on wet lands, and the roller should be freely used. The time of sowing Wheat will of course be determined by circumstances. Some sow in September, others up to the 15th or 20th October—every one must determine this by his own experience, and by his situation.

We shall refer to this subject again, as we have much to add to what we have already advanced.

Original Correspondence.

ON THE RESUMPTION of SPECIE PAYMENTS.

To the Editors of the American Farmer:

The time has arrived when it seems proper for me to bring these papers to a close. The subject is by no means exhausted; and it grieves me to part, even for a season, from your genial readers, whose kind approbation and warm sympathy have greatly cheered me in my labors. But the heats of summer are upon us, which indispose the minds of both writer and readers for close thought or laborious investigation. We are also upon the eve of one of those exciting elections which greatly agitate the popular feelings, and disqualify most men for the important duty of calmly and philosophically considering great public questions. My purpose was to discuss these questions entirely in this spirit; and the careful reader will perceive, upon re-perusing the whole series, that the original plan has been adhered to as closely as was consistent with circumstances. It was not in the contemplation of the writer that a great party would adopt specie payments, which lay in the path of his investigations, as part of its political platform, and he cannot now perceive why there should be difference of opinion between parties on a question involving so deeply the vital interests of government and people; and he hopes that all wise and good men, without distinction of party, will see the propriety of adopting the reforms indicated as necessary in our financial and monetary system. Yet it may possibly be thought that this subject, which has only been fully opened, and admits of much further illustration, comes now within the list of party topics, not proper to be discussed in an agricultural paper. If such, in the opinion of the editors, be the public judgment, I promptly acquiesce in it. Our financial policy and monetary system were adopted as of public necessity, with the acquiescence of all, and no party can be held especially responsible for them. Hence it seemed to me that they were peculiarly proper subjects to be temperately discussed, in an agricultural journal, for the information of the whole people, but especially of farmers, who are more deeply interested in the subject than any other class.

That old tory, Dr. Samuel Johnson, who, during the American Revolution, wrote "Taxation no tyranny," has perpetuated some of his peculiar notions of government, in a few lines which he furnished Goldsmith for his beautiful poem, the Traveller. He thus has given currency to a dogma which has been adopted without reflection by thousands, who, probably ignorant of its source, have no idea that they were thus excusing or justifying the acts of arbitrary government.

"How small of all that human hearts endure,
That part which laws or kings can cause or cure."

The lines of Pope are practically more true and philosophical:

"For forms of Government let fools contest,
That which is best administered is best."

For surely there can be nothing more destructive of the happiness and prosperity of a people than a weak, wicked or corrupt administration. Differing entirely from Dr. Johnson, I have endeavored to convince the farmers that the great calamities which have overwhelmed them since the war, are due to unwise government, both state and federal, not fairly chargeable to any party; and that no general relief can be obtained by individual effort until there shall be a thorough change in the policy of both.

To our Virginia friends I endeavored to give timely warning of the dangers ahead, but the engineers of the car of progress, flushed with new-born zeal and hope, put on full steam, raised the brakes, and rushed madly on their headlong course, and here we are! I have endeavored to do the same kind office to those in charge of federal affairs, and I sincerely trust that the good sense and patriotism of all, without party division, may lead us to safe results. Before taking leave of this subject, it may be well to state certain principles and facts as the foundation of future reasonings. Inconvertible paper money has in modern times performed a wonderful part in wars and revolutions. Yet it is believed that history furnishes the instance of no country that long continued rich and powerful in time of peace under the paper system. The debt of Great Britain is said to be nearly one thousand four hundred millions of dollars greater than that of the United States; yet it is funded at about 3 per cent. interest, and ours at double that amount. Great Britain has continued to pay specie and increased in wealth since 1819. Interest at the Bank of England

is now 3 per cent. per annum, whilst the average interest in the United States is fully four times that amount. A Bank of England note is as good as a gold bill of exchange in any commercial market of the civilized world. Of what avail would a United States bank note be to a stranger in England or on the Continent? It is said that thirty-five millions of dollars will be expended by our countrymen in foreign travel during this summer. Our currency will not avail them; they must encumber themselves with specie or have letters of credit upon European bankers, equivalent to specie, to enable them to travel. What foreigner thinks of depositing specie in the United States? How vast an amount of American capital is always on deposit in Europe, for safe keeping and commercial purposes, connected with the trade of China and the East?

The population of the United Kingdom does not differ materially in number or character from that of the United States. Her colonies have usually been regarded as an incumbrance and as diminishing rather than increasing her resources. Yet how striking the contrast between the prosperity of the two countries! The British navy is larger and more efficient than ours, and has constantly been supplied with ships of the greatest power and most approved model. The alarming fact was recently developed in a debate in the Senate that we have but 36 ships in commission—some of them unseaworthy—and not one of first class capable of contending even with the improved ships of Spain, a nation which, though long regarded as *effete*, seems now to be looming up on the ocean as a great naval power, and flaunts her flag almost in sight of our shores with the audacity with which she displayed it in British waters in the days of the Armada.

Our commercial marine is in no better condition. The Secretary of the Treasury, in his last report says: "Returns for the fiscal year 1870-71 show that the ocean commerce of the United States is rapidly passing into the hands of foreign merchants and ship-builders." "In 1871 we owned less than 38 per cent. of the whole." "The difference in favor of British ship-builders is at least 30 per cent." "We pay to foreigners in freight 75 millions in gold, which is a serious difficulty in the way of the resumption of specie payments." "It is certain that without some efficient action on the part of the Government the entire foreign trade of the country will soon pass into the hands of our rivals." The Secretary recommends for these evils the very questionable remedy of a subsidy of $13 a ton on steamers of 2000 tons, for five years, equivalent to a bounty on a single ship of $126,000. Without a commercial marine the public navy cannot be supported, for private ships are the only nursery for seamen.

The Treasury Department has been making extraordinary and ruinous efforts to pay the public debt; it would have been much better policy to have, by a liberal system, encouraged production and the employment of the vast amount of idle labor that, fully employed, would soon pay the public debt. By the policy pursued it is by no means improbable that every million paid has cost the people ten millions, and the depreciation of the agricultural lands of the country, in consequence of the contracting policy of the Treasury, has been more than equivalent to the whole amount of the public debt.

Our agriculture, as a paying business, has been destroyed, and can never revive under this system. The paralysis is universal. It extends to the West and the South and even to New England. The agricultural lands of Illinois are greatly depressed, whilst under the centralizing policy the burnt lots in Chicago sell for more than they would have brought with the buildings on them. Even Richmond and the smaller towns of Virginia boast of returning prosperity; but these indications, if they exist, are no more evidence of the sound condition of the commonwealth than the hectic flush on the cheek of beauty is a sign of perfect health.

In Massachusetts, which formerly had the best and cheapest local currency in the world, there is now great complaint among the farmers of the want of "active capital," that is, money; and an intelligent writer in the admirable report of the State Board of Agriculture declares that if all the land in Massachusetts were now sold, it would not bring enough to repair the dilapidated fences. Our internal trade is irregular, fluctuating and unsatisfactory, and our foreign commerce is carried on with other nations greatly to our disadvantage. The great body of the people engaged in industrial enterprises are impoverished, whilst brokers, gamblers in gold, government securities, and railroad monopolies, are enabled to amass immense fortunes, producing an inequality in the condition of the people, scarcely compatible with republican institutions.

"Ill fares the land to hastening ills a prey,
Where wealth accumulates and men decay."

All these and many other evils which we have not time to enumerate, flow from the inconvertible paper system, and the ruinous policy it has engendered. It is high time that these evils were arrested by the common consent of the whole country. But I must forbear; and returning my thanks to my kind and appreciative readers of both sexes, I bid them, for the present at least, a cordial farewell.

WILLOUGHBY NEWTON.

Linden, Westmoreland co., Va., July 9, 1872.

The Crops in Virginia—Prices, &c.

Messrs. Editors American Farmer:

Dear Sirs: Our wheat harvest is over and some have threshed their crops, and I hear they have not turned out to expectation by a good deal—one crop, said to be a fine crop, I hear only turned out three for one. My tenants on Hardware river are threshing, and send me word it does not turn out well; at

this I have been much surprised, for I have looked upon my own crop as certainly the best I have made since 1858; it seems to me well filled with as good grain as I have ever made. I have threshed some, but not cleaned out; it bids fair to turn out well. A short crop at the present prices, and so great a failure in all other crops, will prove very disastrous to our whole country. Our oats are almost a total failure; on much of our good lands we cannot make more than the seed sown, if so much. Our hay crop is the very shortest I have ever known; mine is said to be the best in Albemarle, and I have not cut a half a crop from any single acre this year, and on much where I had fondly hoped to have cut a good crop, it has barely been tolerable grazing, and half my oats on low grounds nicely seeded in good time, can't be cut at all. My orchard is the very richest lot I have, which has been seeded in oats for years for my hogs; last year, dry as it was, they fell down, but this year, although put in better order and seeded the first, because I contemplated seeding it down to orchard grass, they are barely high enough to be cut. In a portion of my oats on low ground the buckwheat came up with the oats as thick as I ever want them for a fallow, and I fondly hoped to have as fine a green crop of oats and buckwheat to turn in for my wheat crop as I ever had, but the oats are as near nothing as they could be, and the buckwheat all dead. My pastures are dried up and stock have to be driven to water. My mill ground all last year; it is now hard work to get meal to supply the actual daily wants of the neighborhood. Gardens gone; truck patches on the creek have failed. I sowed a bushel and a half of peas on the creek for my family use, on land which would bring tobacco, and I fear they will fail. My land is nicely fallowed for my buckwheat crop, and I wished to have sowed some weeks ago, but have feared to do so lest I should lose my seed. Thus are things on my farm. I learn mine looks as well or better than others; of this I cannot say, as I am yet unable to go from home, but if mine is the best, God help the worst. This is the first year of my life in which I have known top dressing of good manures not to have any visible effect; such certainly is the case with mine. All of my clover and grass seeds sowed last fall and spring have perished, which, with me, is no little loss, as it was heavily seeded and upon thoroughly prepared pea and buckwheat fallows. Yours, very truly, &c.,

GEO. C. GILMER.

Buckeyeland, near Charlottesville, Va., July 10, 1872.

Crops in Georgia, &c.

Corn and Cotton crops are excellent in this section of the state. I do not think I ever saw a cotton crop look so promising as it does at this time. I am satisfied that my own crop will double any crop that I have made since the war. * * I am endeavoring to pull up again from my great losses, caused by the result of the war, and to succeed in doing this, I am going to change my system of planting, that is, to sow more small grain and grasses. Clover succeeded well with me this spring, and I am highly pleased and will order some seed through you before long.

I should like to have at this time a cider mill or press, but I see by advertisement in your paper that dealers ask $25 for one in Baltimore. How is that? A middle-man in Columbus, Ga., offers and delivers them there for the same money. Now, would it not be to the interest of both parties, for the manufacturer and consumer to be brought directly together and trade with each other? It is the case with other agricultural implements. We can purchase here at Columbus, Ga., from the middle-men, plows, harrows, reaping machines, and all other articles at a less price than we can purchase from the manufacturer and lay at our depot, with the freights added.

J. A. L. LEE.

Muscogee Co., Ga., July 8, 1872.

Crops in Maryland.

Editors American Farmer:

We have finished cutting wheat, and have made about two-thirds of a crop; the straw is remarkably soft and fine, and the head full of grain. The well ploughed oat ground has in all probability produced four bushels more of wheat to the acre than the corn ground treated in the same way. At first the latter looked the best, but suffered most from the long dry spell. I have become almost a convert to the old rotation of corn, *oats*, wheat, and grass, but think for us the rotation should be, corn, *potatoes*, wheat *grass*; this increases the work, but makes a better preparation for wheat and *grass*, and takes more manure. I am sure that potatoes at 75 cents a bushel will pay better than either wheat or oats, *and the more labor, brains*, AND *manure* judiciously applied to a given space, the better.

We have had more than usual trouble with harvest hands; the men engaged last year, and more positively some two weeks before we wanted them, have not turned up as yet, and others since engaged have failed to meet their obligations. The three meals, two luncheons, and the money when wanted, seem insufficient. Would it not be well for farmers and laborers to meet before harvest and fix the price, &c., for the hands, and to refuse to hire men who do not meet their obligations?

The grass is short, say one-fourth of a crop; the two poorest acres produced about half a ton to the acre; I am pleased to say that it is of good quality.

A few days since I passed the crack farm of our neighborhood, and one of the so-called grass fields was covered with Carolina pinks, and I could see no grass. The place has been rented out, and the tenant has let the field run to weeds. Can it be that the larger farmers and planters have not the energy, skill or brains to carry on their farms, that they put

out their farms to others; or have they, as a class, yet to learn, that mind, energy, and perseverance, produce character, manhood, and wealth? Why put out to men of less education the care of their lands and interests? Is there not a skill and success, that money can not and will not bring?

The corn in the neighborhood looks badly; most of it was *spring* ploughed, and we are more injured by the cut-worm than would pay for the fall ploughing. It is true that I am no better than others, as I got but a small part ploughed last fall. A part of mine is getting in tassel, and some with four small leaves; we have had to re-plant it three and four times, the best ploughed suffering most from the cut-worms; this is not a good reason for shallow ploughing, and happens probably not more than once in twenty years. I noticed that the re-planted corn put in the deepest, came up first, and that put in shallow, cooked in the ground. I see the ants catch and kill the cut-worms, and hardly know whether they are friends or foes.

The Philadelphia raspberries are good, and for more than three weeks we have enjoyed them. I don't think they are as good quality as the old Antwerp, but we get about four times as much fruit and far less suckers. We have a prospect of an abundant crop of apples. The grapes look well, but the Iona rots upon the vines. H. K.

Baltimore Co., Md., July 12, 1872.

What Shall We Do?

Editors of the American Farmer:

Upon the resumption of your time-honored journal a few months ago, the very pertinent question of "What shall we do?" was raised by one of the Old Dominion's most cultivated gentlemen, statesmen and successful farmers; he himself has handled the subject with masterly ability, as also have many other gentlemen who have both drilled in and broadcasted views which have been of essential benefit to your many readers. Pregnant as this question is with all that is dear to the afflicted Southron—boundless as the territory in empire, it could not be reasonably expected that an answer was to be had through a few short essays in a journal devoted to so many and multifarious duties. Nor has it been answered—nor will it ever be answered to the satisfaction of all—nor do I propose to answer it; but each and every one attempting, in part, its solution, may produce in "*tout ensemble*," from so much thoughtful pruning, a comely, vigorous, fruitful tree, one under which our children may sit in hope and peace.

At the present outlook the desolated States are environed (and I might say ironed) with so many difficulties, that it is hard to embody in one article even a catalogue of its miseries; so we have to abridge as much as possible.

Financially, we are without money or credit—in a word, bankrupt in all save honor, and only a few but what are bankrupt in hope. Socially, a wide-spread demorialization exists—a lost confidence—confidence of man in man—man in friend—man in neighbor. I do not say universally so, but I do say too much of this exists, and this is the saddest feature of all, for upon this, in every age and clime, the keystone of the arch has ever rested.—This the politico-economists will tell you is a natural sequence of all wars; but it should not be so with us, for we have been taught "a more excellent way," and there has been too much community of sentiment, identity and unity of interest for such a long period, to let the good angel of the past be superseded at last in this respect, and her throne usurped by the demon of distrust. In the first place, I say then, let us lock shields and anchor to the same mooring.

The question, "What shall we do?" we assume, then, to be next in interest to the one proposed on the day of Pentecost, "What shall we do to be saved?" The one of a temporal, and the other of a spiritual nature, yet to some extent an affinity exists. As with the first, so with the last; a few words will answer, and yet volumes are unable to teach. With the last I might say, fear God and keep his commandments, is the sum total, and yet the Evangelist, the priest, the missionary, the philanthropist, have dwelt upon the theme in every age and clime, and mount has answered to valley, and valley echoed to mount, and yet eternity only will probe to the depth the all-important question. Time—patience—faith—hope—work—and finally the absorption of time into eternity, will be the solution. In our first question, then, we might say, nerve, resolution, health, brain, faith and hope will solve for us this gigantic query. But here again we have to deal with details as well as generalities, and few of us *can assume any postulate.*

Pardon, Messrs Editors and kind readers, the digression—the extensive prelude to such a short volume—and we will say, 1st. Go to work—go to work with an invincible will to conquer (D. V.) every obstacle which lies in our apparent rough pathway—look not back one moment upon the rosate hues of the past, or forward to the delusive hope, to rainbow pencilings or silver linings to our clouded horizon, but expect that difficulty upon difficulty may be piled like Ossa upon Pelion; expect that the gondola of our hope may often be threatened by both Charybdis and Scylla—but more than this, than these, than all, look forward upward to the hope, that with an unflinching nerve, a strong arm, a steady eye, a rectitude of purpose—acting with all the reason that God has given us and with that zeal and honesty of purpose which His will would direct, that victory shall perch upon our banners, that the long midnight of gloom through which we have so sadly wandered, will soon be dispelled by the heralding chanticleer of an effulgent morn. Then, our difficulties having been overcome, with just pride we can, in "looking o'er the perils of

our vanquished way, bless the toil through which our victory lay." In my next I shall propose the way to the victory.

Halifax Co., N. C. J. D. THORNE.

What I Learned about Farming, &c. in Ten Days.

Messrs. Editors: Having scarcely left my home and my chief field of labor (the Monumental City and its environs) for the past two years, I determined to take a short trip, so I left Baltimore on the first of July in pursuit of recreation, and a cooler temperature, and to observe what progress had been made in the arts in my native state. N. Y., in the few years that had passed since I was there. What had been done, and was being done in Agriculture, Architecture, Engineering, and Landscape Gardening, were matters of special interest to me, as they are respectively branches of my profession. In the former, the most important of all of the arts in this country, I found in many districts, evidence of great improvement. I learned everywhere that I went that the past and current years had been remarkably dry, and in places, the severity of the drought in conjunction with the destruction of vegetation by insects, which are more active and destructive in dry, than in wet seasons, had nearly ruined farmers, who were heavily in debt I found the most marked prosperity in the *dairy districts*. In central N. Y. where, 17 to 20 years since, a large majority of the farms were heavily mortgaged, now very few of them are suffering from this very unpleasant incumbrance, and the fertility and productiveness of the land is greatly improved, as also the architectural character of the dwellings, and also in some instances the farm *barns*; but the structures used as cheese factories, are generally very unsightly, and so numerous that you see one by the road side on an average, about every 4 miles, and the dairy product is immense.

Notwithstanding the unfavorable topographical character of this region of the state, numerous well graded and well stocked railroads have been constructed within the past few years, and others are in progress, and although they are said to be mainly built with "*skimmed cheese*," they appear the same as other good railroads.

The grass, winter grain, tobacco, peas, oats and hops, of the portion of N. Y. which I visited, are all seriously affected by drought, and the late, cold spring. Corn, though, planted late, promises an average crop; apples numerous, but small, owing to the severity of the drought.

I was pleased to find in several districts, that the existing *road law* prohibited live stock of all kinds from running on the highways. The hedge-rows are generally removed, and roadsides are mown for hay—and in many places there are no road fences, where the land is mainly cultivated and mown.

I observed that many of the large dairy farmers are also breeding quite extensively, an excellent quality of horses. Very little grain is grown in the best dairy districts, but wheat refuse, the products of the immense flouring mills of the West, is used for cow feed in large quantities; this, added to the entire products of the soil, minus the cheese and butter extracted, rapidly increases fertility. The average price of cows in the dairy district is about $50. I examined a large number of them and found them very low in the scale of test by Mr. Guenon's system of ascertaining the lacteal qualities, and I am satisfied that the value of the same number of cows might have more than doubled, in the past 8 or 10 years had the calves of both sexes been carefully and intelligently selected by the marks designated by Guenon. Few calves are reared in the dairy districts, and most of them are destroyed at the age of a day or two, called "deaconing." Canada thistles abound in the best grazing districts of N. York; are mown and consumed with the hay, and when the pastures are overstocked, as many of them are, they are eaten by the cattle in a green state; they are a great nuisance, and will probably never be eradicated, and are annually rapidly spreading South, but they do not thrive well in Md. and Va., as I have observed when they were introduced in Northern hay, during the war. The dairy animals are mainly of the native breed with a few grade Short-horns, Devons, Alderneys and Ayrshires—I, however, saw a few good herd-book Alderneys in Madison Co., but neither thoroughbreds nor grade Alderneys are highly esteemed by dairymen. I saw a number of large dairy stables, but not one that I considered properly constructed or well kept; there is not that degree of neatness and cleanliness that I hoped to see. The stables are generally too open, and cold, to admit using of water for cleansing in winter.

The main dependence for manure is on that made on the farm, though both carbonate and sulphate of lime act with great advantage where I saw their effect. There is a great want of system and neatness apparent on all the farms which I visited, notwithstanding there is vastly more profit realized from the same area, in the dairy districts, than in any other with which I am familiar, except in the best peach and strawberry-growing regions of Maryland and Delaware.

Dairy farming and wool-growing are the only systems which insure, not only maintaining, but increasing perpetually and rapidly the fertility and productiveness of the soil; and with proper protection, both of these branches of husbandry might be greatly increased in this country and still maintain remunerative prices for all produced. Dairy exports are rapidly on the increase, and American butter and cheese are now equal, if not superior to those of any other country, and yet the excellence and preservative quality of both may easily be greatly improved by greater care and skill in their manipulation.

The wagon roads in N. York are in a shock-

ing condition, as they are everywhere where the "*labor tax*" system prevails. The river counties of Eastern N. York are largely devoted to milk production; they had been reduced, by grain culture, to a low condition of fertility, before the milk business was embarked in, which was impracticable until railroad transportation was supplied, now abundant and convenient. In many districts great loss and inconvenience have been suffered of late by both the milk producers and the "middle men," for want of water.

Root culture is almost entirely neglected in N. York, but Indian corn blades and stalks for feeding both cattle and horses, in both the green and dry state, are highly prized.

I found no farmer, however, who had learned the great secret of curing cornstalks for winter use, which is this: the fodder corn, in that latitude, should be planted as early in the season as the ground can be fitted for the seed; it should be planted in close drills, say 2 feet, and be cultivated sufficiently to keep it free from weeds until the shade of the crop will prevent their growth. Varieties of medium growth are preferable to the largest or smallest, for fodder, and 2½ bushels of seed per acre is the proper quantity. The ground should be very fertile, and the crop should be harvested at the period that the larger portion of the pollen is falling from the tassel. When cut it should be laid in small gavels, and there remain two to four fair days, turning it over every day towards evening. It should then be bound in small sheaves, when free from rain water, and be placed in well bound stooks of 8 or 10 sheaves each. Corn designed for fodder should be cut and cured at least four weeks before there is any severe frost, as it is impracticable to cure it so that it may be safely mowed or stacked, if it is not cured before the frosty season sets in.

Ordinarily, it may be safely stored in a close barn or mow after it has stood 6 or 8 weeks in the stook, if hauled when dry. The closer the mow is in which it is stored the better will it keep, and it will be less injured by heating in the mow unsalted than salted.

There is a great error in the opinion entertained by farmers generally, with regard to the preservative effects of a small quantity of salt applied to hay and stalks in the mow or stack. A quantity must be applied that would be injurious to the animals, to preserve the forage. When forage highly salted is fed to animals, irregularly salted, it will be eaten with avidity, even if it is badly mo'ded, but it is eaten for the salt, and the nutrition of the molded forage is equally impaired whether salted or not, and any amount of mold impairs the quality of it in a greater degree than is generally supposed. Corn for soiling purposes may even be planted as late as July, but for curing for winter use it should be planted early in the season.

Improvement in the way of landscape decoration is in many parts of the State very apparent, and I found productive cold graperies on unpretending farms. Vegetable growth is much more rapid in high than in lower latitudes. I found a variety of corn that will under favorable circumstances fully mature, and be fit to grind in 90 days from planting, and when planted properly will yield 60 bushels or more to the acre.

The wages of farm labor are high in N. York, and the quality of it inferior. One of the serious difficulties of the dairy business is to get and keep good milkers, and cheese makers. It struck me that everything pertaining to the dairy business in the district of N. York, that I visited, was rudely and imperfectly conducted. Milk and all its products are sensitive to impurities, hence the greatest possible degree of neatness and cleanness is requisite. Should the dairy business ever be overdone, the land will be in a condition favorable to almost any other production.

J. WILKINSON,
Landscape Gardener and Rural Architect.

Constituents of a Fertilizer.

The following recipe is the same, or perhaps far more reliable than many others which are being hawked about the country, the "right" to use which is sold to farmers sometimes as high as $20 for a single farm. This recipe is published under the name of *Dr. Valentine's Artificial Guano, Liebig's Great Fertilizer, Dr. Risby's*, or *Mr. Bryan's* formula:

"No. 1. Dry peat, (if not to be obtained, use garden mould or rich soil).....20 bus.
No. 2. Wood ashes..... 8 "
No. 3. Fine bone dust..... 3 "
No. 4. Calcined plaster..... 3 "
No. 5. Nitrate of soda.....40 lbs.
No. 6. Sal ammoniac.....22 "
No. 7. Carb. Ammonia..... 11 "
No. 8. Sulphate soda.....20 "
No. 9. Sulphate magnesia.....20 "
No. 10. Common salt.....10 "

Directions for Mixing.—Mix Nos. 1, 2, 3, together; mix 5, 6, 7, 8, 9, 10 in four or five pails of water, or enough to dissolve the ingredients. When dissolved, add the l quid to the mixture, (1, 2, 3,) and mix as in mortar. When thoroughly mixed add No. 4, (calcined plaster,) which will absorb the liquid and bring the whole to a dry state. Mix under cover, in a dry place—pack so as to exclude air. Observe these proportions in making small or larger quantities. The above recipe will make one ton, which will manure seven and a half acres of land."

The cost can be easily calculated. Nitrate of Soda is quoted here, by our advertisers, Mess. R. J. Baker & Co., at 6 cts.; Sal Ammoniac, 15 cts.; Carbonate of Ammonia, 24 cts.; Sulphate of Soda, 1 ct., and Sulphate Magnesia, 2½ cts. per pound.

THE AMERICAN FARMER
AND
RURAL REGISTER.

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SAML. SANDS, WM. B. SANDS, } Editors and Proprietors.

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Advertisements on cover subject to special contract.

BALTIMORE, MD., AUGUST 1, 1872.

To New Subscribers.

Having had returned us some numbers of the February issue, which we needed to complete full sets of the present volume, we can now, to a limited extent only, supply these full sets. Our offer, however, to give to all new subscribers who wish to receive them, as complete sets as possible of the present volume, *except the February No.*, still holds good!

Globe Microscope Premium Withdrawn.

Having experienced considerable delay in receiving from the manufacturer the Microscopes already ordered, we have determined —apprehensive of difficulties in obtaining our supply regularly and promptly—to discontinue the offer heretofore made of them as a premium for clubs of subscribers to the *Farmer*. Persons who are already entitled to this premium will be supplied with the least delay practicable.

MR. NEWTON'S COMMUNICATION.—The concluding paper of the series which this gentleman has presented to the public through the pages of the *Farmer*, will be found in the present number, and our readers will join with us in the regret that for the present we will be deprived of the monthly contribution from his classic pen to his old and favorite journal, with which we have been regularly furnished since the commencement of our new series. This regret will be heightened by its occasion, which is the impaired condition of his health, which all will doubtless join in hoping may soon be fully restored.

These essays of Mr. Newton have attracted more than local attention, and the highly complimentary remarks of our correspondents in the extracts we publish on another page will attest the appreciation in which Mr. N. is held, personally and as a public benefactor, by those who know him best. We are not aware that, under any circumstances, with age and its accompanying infirmities creeping upon him, would this distinguished son of the Old Dominion be willing again to return to the councils of the nation, or to take a leading position in the affairs of his own state, but we sincerely believe if the people could induce him to resume some one of the high stations he formerly so ably filled, that in the field for the exercise of the talents, learning and experience he possesses, such as no former period offered, he would be found in the present condition of their state and times, peculiarly the man for the occasion.

We hope, however, that under any circumstances, he will soon be able to resume his pen, and that our pages may again be enriched by its productions.

☞The paper of Professor Wilson is one to which we would particularly refer, as worthy of the attention of the student—it is written in a style suited for the uninitiated, and we expect that a series from the same pen will be furnished us, calculated to instruct and enlighten the general reader upon those subjects which all classes should understand, since they come into the every day pursuits of life.

THE SIGNAL SERVICE.—We have received from the office of the Chief of the Signal Service a copy of a circular addressed to Boards of Trade, Chambers of Commerce and Agricultural associations, calling attention to the enlargement by Congress at its late session of the powers of his office for the benefit of agriculture and commercial interests, and inviting suggestions or recommendations to perfect the system now established, and to make it more useful to the varied interests for whose benefit it is designed.

The Farmer and its Agency.

A subscriber at Statesville, N. C., ordering through our agency, lime and plaster, adds:—

"I am forced to say, each No. of the Farmer as it comes to hand, continues to surpass the highest expectation of your friends. Without exaggeration, it is a sterling work, and on the same amount of paper conveys more real practical information, than any other work N. S. E. or West. I am only sorry as yet I have failed to send you another list of subscribers. The people here are poor, but require light: Go on; you are doing a good work! Very truly, your friend and sympathizer."

Another, at Fredericksburg, Va., says:—

"The salt you sent me was duly received. The gentleman whose name I last sent on, intends writing you in regard to other matters—he says that he 'would not desire to add to or take from one of the letters of Mr. Newton in one of the numbers sent him—he would not dot an *i*, or cross a *t*, and that he considers those letters alone worth several years subscription.' I think I have been the means of sending you more than a dozen subscribers, and I still continue to recommend it to one and all, as being the '*ne plus ultra*' of agricultural papers; and although not engaged in agricultural pursuits as before the war, I yet take three other agricultural papers, besides your own, one in our own state, one in N. Y. and one in Philadelphia. Wishing you the greatest success and prosperity in your renewed undertaking, which you so much deserve, I remain truly yours."

A new subscriber, in remitting subscription money, says:—

"I accord with my friend London of N. York, in saying that Mr. Newton's letters, are not among the least of the inducements to my subscribing, as I *always* read anything from his pen with interest, and only regret that so few of the purest and best men (to which class he certainly belongs) in dear old Virginia, are as free in the use of their pen, as he is, upon any subject that has for its object the well-being of our State."

From Bandera, Texas:—

"I have already several agricultural magazines, but I cannot do without my old friend of brighter and better days. I often read and re-read with profit many articles published 20 years since. My lamented friend Edmund Ruffin, Sr's. articles on draining, plowing in wide beds versus narrow, curing and saving clover hay, &c. &c. can be read with as much pleasure and profit, and are as applicable now as they were then. And I am glad to see that my friend of once happier days, Hon. Willoughby Newton, is a regular contributor to your magazine. May his light so shine as to illumine the paths of his friends in adversity."

From Northumberland Co., Va.:—

"Mr. Newton, in his April No., has struck the right key; capital is what we want; with it our country will flourish. Money is what we want—and the man who can devise the scheme to bring it to us will prove the saviour of this country. The Farmer is I think better than it ever was. Wishing you great success, I am yours."

From Concord, E. Tenn.:—

"I have received your American Farmer and Rural Register, and in order to show you how I appreciate an old friend, have made you up a club of subscribers, which would be but little trouble for each one of your old subscribers to do, and which I hope every one of them will do. The last number is worth the subscription price for a lifetime to every farmer south of the Ohio. We must raise grass and keep stock to gather it and improve our lands, or we will soon be sold out for taxes. We want the experience of practical, intelligent farmers, recorded in some agricultural journal to appeal to our judgment, to influence us to 'turn from our evil ways.' Nothing but 'line upon line and precept upon precept' will change our ruinous system of farming. I have ever regarded your paper as the best agricultural paper published for the South; have read it for near 30 years, and now hope it may never have cause to suspend again."

From a correspondent at Columbus, Miss.:

"I congratulate you on the excellency of your magazine and hope you will meet with liberal support."

From the raiser of a Club to the Farmer in North Carolina.:—

"For the last 30 years I have been reading all the agricultural journals South, and the numbers of the American Farmer received since you have resumed its publication, are not surpassed by any, and equaled by few. Success to your praiseworthy enterprise, as the basis of wealth and independence is in tillage."

From another, who sent us a good club from Pr. Wm. Co., Va.:

"We have formed a Farmers' Club here, and we are anxious to get all the information we can in order to recuperate our land here. Our neighborhood (Nokesville,) are mostly Northern men, and all workers. I am a New Hampshire man myself, and am trying to put our Northern notions into practice here, to make our own fertilizers as much as possible, and I think with the aid of the A. F. we shall be able to do it."

From King Geo. Co, Va.:—

"I congratulate you on once more taking possession of the Farmer, and trust you will make it the foremost periodical in the Union. It should be taken by *every farmer*, and I am very sure from the liberal rate you propose to subscribers, it will be appreciated by them.

"What we want are short practical essays

on agriculture, stock, &c.; we have not time to devote, as before *the war*, to long effusions; we want to know the quickest way to improve our land—make good crops—save labor—save crops to best advantage, and sell them without so many middle-men to be paid by us."

"We have formed an Agricultural Club, and I trust other counties in our dear old State will follow our example in this respect; I find already it is stimulating our farmers to action. Accept my sincere wishes for great success in your return to the American Farmer."

From Kent Co., Md.:

"I am much pleased with your A. F. and will try to induce some of my friends to subscribe for it. I am deeply interested in agricultural subjects, and subscribe to several papers on the subject."

From Greene Co., Ga.:—

"I take about one dozen agricultural papers, and I consider yours equal to, if not better than any of them."

Acknowledgments.

From John F. Wielandy, Esq., St. Louis, Mo., Corresponding Secretary, we have received the ANNUAL REPORT OF THE MISSOURI STATE BOARD OF AGRICULTURE FOR 1871, being the Seventh published. It is a large, well printed volume of over 700 pages, containing a great deal of valuable matter to the agriculturist, embracing besides the proceedings of the State Board, reports of the meetings and fairs of the State Horticultural Society and the Kansas City and St. Louis Fair Associations, of the Agricultural Education Convention held in Chicago in August, 1871, Mo. County Agl. Statistics, the Report of the State Entomologist, a number of able essays, &c., the whole presenting a work of more than transient interest, and creditable alike to the State and the Editor. The volume will be furnished free by the Secretary to applicants who will prepay the postage.

THE MODEL POTATO: By Dr. Jno. McLaurin; pp. 102, price 50 cts. Published by S. R. Wells, New York. This little work embodies new views on the cultivation of the potato, offers suggestions as to the causes of rotting, with a remedy therefor, and enunciates what the author believes to be prevalent errors in the common methods of growing this popular tuber. Sections are added on digging, preserving and cooking. The ideas put forth have the attraction of novelty, and while some will attract ridicule, others no doubt are worthy of being put to the test of practice.

CIRCULAR OF THE TWENTY-FIFTH ANNUAL EXHIBITION OF THE MARYLAND INSTITUTE, to be held at Baltimore, Oct. 1st to 31st, 87?

COMBINATIONS FOR THE PURCHASE OF MANURES.—In one of the early numbers of our present volume, we suggested to farmers the advantage of uniting together for the purchase of Peruvian Guano, on the score of economy. As the Agency here is not authorised to sell in quantities less than ten tons, a very material saving would accrue to farmers in neighborhoods where it was convenient to do so, to unite in their purchases from first hands. Of course, if dealers have to retail this or any other manure, they must necessarily be paid for their outlay, cartage, storage, and all other incidental expenses, and probably in this article, their advance in price is in most cases but a fair mercantile profit. Our object, however, is at all times to promote the interest of the agriculturist, and not to interfere with the business of other classes. Manures are a necessity to the success of Agriculture, and the great point to be gained is, that when they are purchased, the value of the article is truly as represented in the transaction. That there are many impositions being practised upon the farmer, we suppose no one will pretend to deny—and they are not confined to this country alone, but are equally prevalent in Europe, as all who read the foreign papers well know, and how to obviate the difficulty is continually claiming the attention of scientific men and agricultural societies and clubs there, as well as in this country.

We learn by late English papers, that in consequence of the exposure of enormous adulterations of artificial manures, and of feeding materials in England, the formation of Clubs of buyers is becoming current there for the purpose of buying at wholesale—the fertilizers purchased being subjected to analysis by chemists employed by the associations. Prof. Voelcker, in connection with this subject, relates some striking instances of artifices used to conceal fraudulent manipulations. The result of these combinations is thus set forth in a paper before us:—

"A paper signed by Wm. Little, in behalf of the South Lincoln Association of England, and addressed to the Chemists of Great Britain, sets forth the satisfactory results obtained by the combined action of the Association in respect to the purchase of artificial manures. He states that the frauds practiced by dishonest manufacturers in counterfeiting approved artificial manures threatens a serious check to the progress of Agriculture. A few months previous to the date

of his communication he was paying to a very respectable firm £6 10s. per ton for a certain manure, a better quality of which he could now obtain for £4 2s. 6d. per ton, with the assurance afforded by the agency of the Association that any fertilizers purchased will be as represented. *The Association purchases only one-third of fertilizer, viz: Superphosphate of Lime*, the members believing that with them the manure derived from stock will, in general, supply every other soil food that can be profitably employed. In no case should a farmer use an artificial manure when he is entirely ignorant of its composition. This objection does not hold against genuine Phosphate Manures, the composition of which is well-understood, and the manufacture of which is subject to general competition.

By proper associate action, such fertilizers can be obtained, of tested quality, and at comparatively low rates"

A correspondent in our last No. (Mr. *Dickerman*,) reports a very favorable improvement in the manufacture of manures in this vicinity; he visited our city with satisfactory testimonials of his disinterested labors, and informed us that in nearly every instance he was admitted with promptness into the manufacturing establishments in and near this city, and had ample opportunity to judge of the operations thereof. We are glad to hear of it—Baltimore is the great central mart for this business, and it is the interest as well as the duty of those engaged in the manufacture of manures, to maintain a high standard for their fertilizers. Mr. Dickerman, it will have been seen, also advises farmers to combine in making their purchases, as is done by the English Association, by which a saving can doubtless be effected.

☞Since the above was prepared, we find in a later report of Prof. Voelcker, the following statement, showing that in England also a decided improvement has taken place in the same business. He says:—

"The demand for superphosphate of lime, dissolved bones, and similar artificials, is increasing from year to year, and, generally speaking, most manures of that description are well worth the price at which they are offered for sale. More than 100 samples of phosphatic manures were analyzed by me last season, and most were found equal to the guaranteed analysis by which they were sold."

In connection with these suggestions we would take occasion to refer to the advertisements in this number, of many of the principal and most reliable manufacturers of this city. Farmers and others wishing to avail of our "Agency" for these and any other articles required for the Fall crops, may depend upon our endeavors to do full justice to their interests.

Trial of Ploughs.—The "Gunpowder Club" of Baltimore Co. at its last meeting, in July, held at the farm of Mr. John D. Matthews, determined to have a trial of Ploughs, this Fall, under the superintendance of the Club. A committee was appointed to make all the preliminary arrangements, and the time, place, and other particulars, will be announced in the Sept. No. of the *American Farmer*.

There was a full attendance of the members of the Club at this meeting, and an interesting discussion took place upon the question, selected for the occasion, "Which is the best and cheapest motive power for the farm, (of the size of those generally owned by the members, from 100 to 300 acres,) Horses, Mules or Oxen." The opinions of a decided majority of the Club appeared to be in favor of Mules, as being less subject to disease, longer lived, more economically kept, consuming one-third less food, and that of a coarser quality, than the horse, and for their weight and size, more reliable for a long and a strong pull than the horse; and, though he has obtained a character for stubbornness, yet he can, by proper training, be brought to a more perfect obedience. The expense of shoeing and farriery is far less than that of his chief competitor, the horse. An excellent team can also be made for the carriage, though for this purpose, as well as for the general appearance of the horse, and the love which everybody, almost, has for this noble animal, the latter claims the preference—but this is outside of the question,—which is the *cheapest* and *best* for *farm work*. For some kinds of farm labor, such as hauling stone, rails, wood, &c., Oxen are preferred, but for general purposes, they are too slow, and not only their own time is deficient, but that of the driver is also measurably lost—and in all calculations, this item is not to be lost sight of, in considering the value of farm work. One advantage of Oxen, however, is to be considered, that they consume the roughest of the provender, are easily kept, and after a few years' labor, will sell for more than their original cost as beef.

TRIAL OF REAPERS AND MOWERS.—The trial which was announced in the *American Farmer*, to come off on the 18th June, in King George Co., Va., was made on the farm of Major Rogers, according to appointment. A committee of seven was selected to superintend the trial, who announce in their report, which has been sent us, that the following entries were made, viz:—

1. The Excelsior, a combined reaper and mower, with drop attachment and adjustable reel—by Knight & Watt, of Richmond.
2. The Champion, a combined machine, one with drop and one with side delivery attachment—by L. H. Lee & Bro., of Baltimore.
3. The Buckeye, (combined,) one with revolving drop and one with self-rake, side-delivery attachment.
4. The Kirby, (combined,) with self-rake, side-delivery attachment—by J. C. Durborow, of Baltimore.
5. The Valley Chief, (combined,) with self-rake and side-delivery attachment—by Palmer & Co., of Richmond.

The condition of the grass, consequent upon the drought, prevented a trial of the several machines as mowers, which the committee regretted, as several of the machines present might have stood higher in its opinion as mowers than as reapers. The following are the awards of the committee:—

"The 'Excelsior,' as a drop reaper, combines all the requisites, constituting a complete harvester, the adjusting reel adding greatly to the value of this machine.

To the 'Champion' we award the first position as a self-rake side delivery reaper. And whilst we do not consider it on the whole—because of less simplicity and the nearness to the ground of its geering—so desirable for general use as the 'Excelsior,' we cannot withhold the expression of our admiration, at the beauty of its work, construction and material of all its parts.

The 'Kirby' we consider an admirable reaper as a self-rake side delivery, but better adapted from its strength and with its single driving wheel, to the mountainous than the sandy, low lands of this State.

The 'Buckeye' and 'Valley Chief,' machines of well established reputations, with hosts of friends in this State, from some cause failed to give your Committee the satisfaction their reputation entitled them to."

UTILIZING FISH OFFAL.— An ingenious method, lately proposed, for utilizing the offal of fish, consists in first boiling it with one-tenth of its weight of cheap oil, heating it from 250° to 300° F. It is then treated with Sulphide of Carbon, whereby the oil naturally contained in the fish, as well as that which was added, is extracted, and a mass is left, quite dry, and containing from 5 to 6 per cent. of nitrogen, and from 12 to 15 per cent. of phosphate of lime. This hint will be found useful in such districts of country where there are fisheries.

☞The following preamble and resolution, presented by F. C. Johnson, of Ind., were unnanimously adopted at the late session of the Agricultural Congress:—

Whereas, We recognize the Agricultural and Horticultural press of our country as having a common aim and sympathy with us in advancing the interests of the agriculturists and horticulturists of the nation, and as being the best medium through which to disseminate the facts and principles it is the object of this organization to promulgate; therefore, be it

Resolved, That we earnestly recommend to the county and district agricultural and horticultural societies throughout the country, that they offer subscriptions to the best agricultural and horticultural periodicals published in their respectives States or sections, as premiums on articles for which money or silver ware of equivalent value are usually given, and that they aid by all other legitimate means in their power, as corporate bodies, to extend the circulation of such periodicals.

Scientific.

CARBON AND CARBONIC ACID.

BY PROF. P. B. WILSON, OF BALTIMORE.

Carbon, an element, is widely distributed throughout nature; pure and crystalized in the diamond, crystalized or amorphous in graphite or black lead, and the varieties of bituminous and anthracite coal—while in charcoal we have the familiar form of artificially produced carbon; combined with the elements of water and mineral constituents, it forms the trunks, twigs and leaves of trees; with the elements of water alone, the starch and saccharine matter; with water and nitrogen, the protein or nitrogenized substances; in fact, all vegetable matter that is pleasing to our taste, or necessary for our comfort and subsistence, is virtually composed of carbon and water. What is still more remarkable is, that the slight variation in composition, a little more of the one or less of the other, gives the almost numberless compounds treated of in organic chemistry.

Carbonic acid, a gas, the most important oxygen compound of carbon, composed of one equivalent of carbon 6, and two equivalents of oxygen 16; their equivalent weight 22, is the result of rapid combustion of all forms of carbon in an excess of oxygen gas,

or oxygen derived from the atmosphere, in stoves, furnaces, etc., or slow combustion (decay) of animal and vegetable matter. If sufficient oxygen is not present, the carbonic acid is again consumed and converted into a lower oxide, carbonic oxide.

It is a component of the respired gases from the lungs of animals; it will not support combustion, and is rapidly fatal to animal life when inhaled. Being heavier than the atmosphere, with proper precaution it can be poured from vessel to vessel. It is the *choke damp*, so feared by and occasionally fatal to miners.

On an average in ten thousand volumes of the atmosphere, four volumes are carbonic acid, yet it is liable to variation, dependent upon meteorological changes; during high winds it is greater, after prolonged rains less; in calm weather the stratum of air immediately on the surface of the earth is much richer than that a few feet higher, while during the latter part of the night it reaches the maximum, and at the close of the day the minimum quantity.

It is rapidly absorbed by water, accounting for the smaller quantity in the atmosphere after a rain. Water through which a current of this gas has been passed will absorb 1.06 of its volume, under the ordinary pressure of the atmosphere. The quantity absorbed by the soil is dependent upon its character and mechanical condition, as well as the quantity of decaying vegetable matter it contains. Boussingault and Lewey found in 34 volumes of light freshly manured soil 8 volumes of air, 2.21 of which was carbonic acid; in humus earth 14.3 volumes of air, of which 3.64 was carbonic acid; in sandy forest soil 4 of air, of which 0.86 was carbonic acid, and in a luzerne field 7.5 of air, of which 0.80 was carbonic acid.

Its value in the soil is not alone for assimilation by the roots of plants; it acts an important part in dissolving the mineral constituents; rocks are disintegrated by its action, and if not completely changed in their chemical properties, are at least left in such a condition to be available for plant food, assisted by tillage.

We have seen that carbon is an indispensable constituent in all vegetation, and that carbonic acid is the most available form for plants to absorb it. That it should be so, let us examine how it affects the health and life of every animated creature, and the power given to nature for purifying and reproducing itself, and converting that which is poison to the animal into food for the vegetable, which is again food for the animal.

The breathing of plants is directly opposite that of the animal; man and all beasts take into their lungs atmospheric air, containtaining oxygen; it comes in contact with the finely divided blood; the carbon burns, is converted into carbonic acid, and is respired. This process is ever going on during life; if there was no means of removing the carbonic acid from the air, in a short time all the oxygen would be consumed, and instead of having an atmosphere of nitrogen and oxygen, we would have one of carbonic acid and nitrogen, then animal life would cease. At each breath the gases forced from the lungs are diluted; currents bring fresh breathing material, and life continues.

The plant, or the leaves and parts containing the green coloring matter, are filled with microscopic cells, corresponding to the lungs of animals; here the carbonic acid is decomposed, the carbon retained, and circulated by the sap through the body of the plant, to enter into the formation of wood fiber, starch, sugar, and the nitrogenized matter: the oxyen is given off to again sustain animal life, and to be reconverted into plant food.

In the animal this breathing process is continuous during life; the combustion at each breath gives sufficient heat to sustain life,—while with the plant, the breathing is suspended during certain seasons of the year; heat and light being essentially necessary, it is only during the warm and genial weath r of the spring and summer months that its active life exists—though parts of a plant that are directly exposed to the sun, are, as a general rule, more luxuriant, and are sooner developed, than those having less favorable exposure. Light is particularly essential; during the night, but little carbonic acid is breathed, on the contrary, oxygen to a certain extent is absorbed. Although vegetation in the temperate regions has a comparatively short period in each year favorable to the breathing of carbonic acid through the leaves, yet it is so complete that the atmosphere retains its purity to sustain the life of the animal creation.

Live Stock Department.

THE MUIRKIRK HERD.

Judge *Jones*, one of the editors of the ably conducted National Live Stock Journal, was recently in Maryland and made a visit to Mr. *G. E. Coffin*, an account of whose herd he gives in the July *Journal*, from which we make the following extract. The bull "*Royal Briton*" alluded to by Judge Jones, bore off the first prize, in the class of two year old Short-horns, at the N. Y. State Agr. Show of 1870; his portrait, with that of the "4th Duke of Geneva," owned by Saml. Campbell, of N. Y. adorns the Transactions of the N. Y. State Agr. Society for 1870, a copy of which we have just received from the officers of the Society. Judge Jones thus describes the several animals of Mr. Coffin's herd, which consists of 32 cows and heifers, 4 breeding bulls, and 3 or 4 young bulls, and we congratulate

the breeders of our State on having in our midst, one of the finest herds of this valuable breed of Cattle to be found in this country:—

Our readers will remember that not long since, Mr. Coffin purchased of Mr. Campbell, of New York Mills, the well-known Booth bull *Royal Briton* (27351), a red-roan, grown since we last saw him at New York Mills to be a grand and unusually large animal, though not four years old until July, and according to the present fashion in regard to condition, would only be considered in moderate flesh, his weight is 2,200 lbs. Of course, to give such weight, we have a carcass of great depth and breadth, and extraordinary length; and yet there is no indication of coarseness or want of proper proportion of parts, as is apt to be the case with so large a bull. The shoulder points, it is true, stand out rather prominently, but then we have such a grand width of chest and brisket as to render this excusable. The head and neck and general carriage of the bull, are well up, and give him very good style; and we notice no indications of the plainness which some attribute to bulls of this family. *Royal Briton* is an extraordinary feeder, and covers with great evenness, his ample, wide, long and level hips, wide loin and well-sprung ribs. Indeed, all things considered, we are much surprised that Mr. Campbell parted with this grand, well-proportioned and well-bred bull.

Sixth Earl of Oxford, is a smooth roan bull, of medium size, and very good quality, and seems to be giving satisfaction as a breeder.

Lord Abraham 11223—we don't like the name; indeed, we hardly think a more inappropriate one could be found for a bull; but the animal is excellent in all useful points; he is, in fact, very superior. He is not large, but exceedingly compact, with full, indeed extraordinary development in loin, crops and fore-flank, with great depth and evenness of flesh all over the carcass. Being rather short, and standing low on his legs, he does not appear as stylish as an animal of greater length standing a little taller—though his head is exceedingly fine and well set on, and there is a general correctness of outline throughout. This bull was bred by Mr. Torr, Aylesbury Manor, Eng., has four Booth crosses, and will, we have no doubt, prove a very superior sire.

Besides the above, Mr. Coffin has a very substantial and useful bull in *Lord Mayor* 6969, of the Princess family. We do not put so high an estimate upon particular families of Short-horns as many people do, and our favorable judgment of this rather plain-looking red bull is not influenced by the popularity of this tribe, but by the opinion formed from his general appearance, that he will get calves of uniform excellence in useful characteristics.

The cows and heifers are, as a lot, very good indeed. Among the good things, the imported red heifer *Portulacca* was the first to attract our attention—long and level, with splended hair and quality, true Short-horn head, shoulder beautiful, with good fore-rib and chest, fine loin, with long hips and good twist, and a remarkable feeder, withal.

The cows *Elvina 3d* and *4th*, by 11th Duke of Thorndale 5611, are good, valuable animals, and have been successful prize-winners; and the young heifers *Elvina 6th* by 4th Duke of Geneva 7931, and *Elvina 8th* by Plantagenet 8795 (the latter being the best) prove *Elvina 3d* to be a very good breeder.

Anita, a thrifty, useful red cow by 7th Duke of Airdrie, dam April Morn by Capt. Balco, 1316, we admired much, and her calf, *Belle of Muirkirk*, by King of the Ocean 8465, with its rich roan color, fine quality of flesh, and thick, mossy coat of hair, and gay head, we regarded as excellent.

Rosamond 9th, a white heifer of Nov. 1870, by Royal Briton, dam Rosamond 7th by Weehawken 5260, is an exceedingly fine and perfect animal in all her points—in crops, fore-flank, in depth, evenness and quality of flesh, she is wonderful, and she has in addition, as fine a head and shoulder, with high style, as an admirer of a true high-bred Short-horn could desire.

Mr. Coffin, for want of suitable pasture-lands, soils his cattle. The first crop used in the spring for this purpose, is rye, sown the previous fall; then clover and orchard grass; then oats sown at three different periods. After the oats, comes the corn, sown in drills in succession, so as to last until frost. Mr. C. regards corn as the most nutritious crop of all.

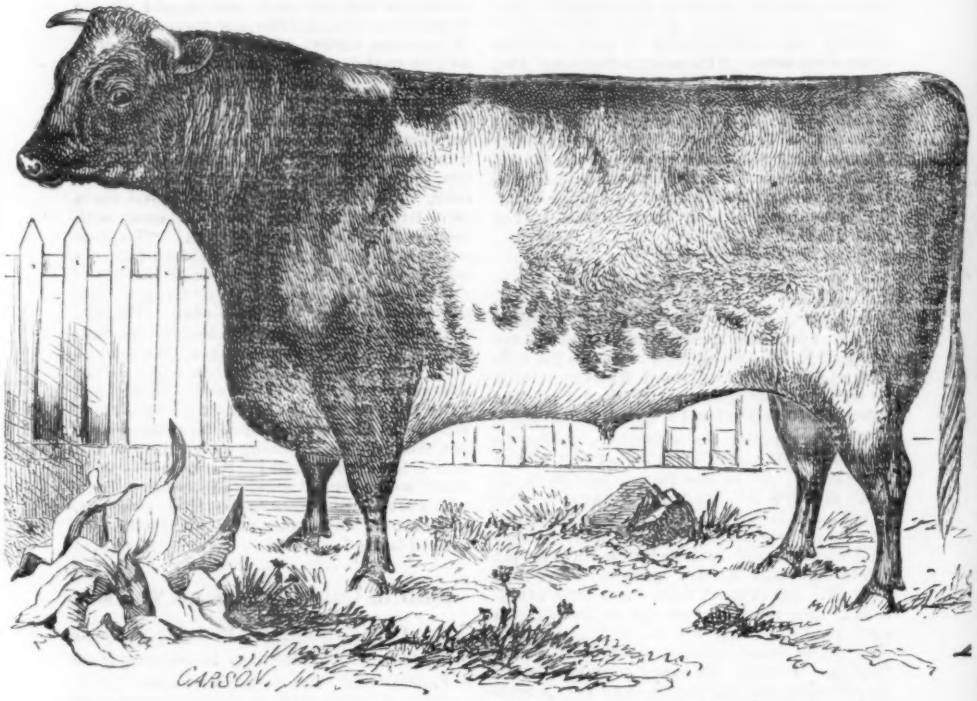
The cattle are driven into the stables night and morning to be milked, and fed four quarts of ship-stuff each. The calves have ship-stuff and corn-meal. The green feed is given them in square boxes, in a large dry yard, where the cattle are kept day and night through the summer.

These boxes are about six feet square, and five feet high, with a **V** shaped opening cut on each side, through which the cattle reach for their feed. By this method very little food is wasted, and the animals are kept clean, and have an opportunity to exercise.

This system requires a good deal of labor, two hands being assigned to take care of and feed 38 head, but there is a great saving in the acreage of land required. Thus, three acres of rye, four to six acres of clover and orchard grass, nine acres of oats and 21 acres of corn—but the last three acres of corn being the land from which the rye was cut—we have, say 34 acres, for the support of 38 cattle. To furnish pasture for the same stock, would require at least 100 acres of land of this quality. But if a man could get the pasture, we think it would not only be better for the cattle, but cheaper, when we consider the extra labor required to grow the crops and feed the stock through the summer months.

In winter, the cattle have, in addition to the ship-stuff, meal and hay, a bushel of roots each per day, and are, of course, kept in high condition throughout the year.

☞ We have just received by the courtesy of Secretary T. L. Harrison, the portrait of Royal Briton referred to above, and which is given on the opposite page.



SHORT-HORN BULL ROYAL BRITON (27,351) 9014. Bred by T. C. Booth, Warlaby, England, imported by Walcott & Campbell, and now owned by C. E. COFFIN, Muirkirk, Md.

Horticulture.

Yellows in the Peach.

In reply to a call from the editor of the Gardeners' Monthly, for "positive experience" on the question as to this disease "causing the fruit to ripen in advance of its natural season," a correspondent thus responds:—

In 1862-63, in Dauphin county, your State, I gathered fruit of Crawford's Early from trees affected by the yellows, ten days before Troth's Early ripened on healthy trees. The peaches thus gathered were highly colored, nearly or altogether full size the first year, but somewhat smaller the second; marketed in Harrisburg as early as the first run of Peaches from Norfolk, Va., and this Peninsula, and brought better prices too. Upon further investigation I found the shell which incases the kernel to be perfect, so far as I was able to discover, though the kernels were not properly matured.

Another instance previous to the above, while in northern part of Rock county, Pa., there came under my notice a fine natural peach, ripening with Old Mixon Free; the tree however began to show symptoms of the yellows, and the fruit season thereafter ripened its fruit with Early York; the next season the fruit was smaller and still earlier, the third year the same tree blossomed—set fruit, but died about the time of its natural season of ripening; the fruit however colored up and attained the size of a shellbark, (or hickory nut,) and tasted somewhat peachy. Since, in Caroline county, Md., I have seen Early York and Serrated Early York ripen before Hale's. The former aroused considerable interest amongst some fruit growers here, who thought it to be a "New Variety, larger and earlier than Hale's." I went to see it, with a view of procuring the buds, if satisfied of its being a distinct kind, but upon examination, I found the trees to be entirely girdled by the "Grub." I then noticed at a short distance from the trees, a sickly cast in the color of the foliage, when compared with the rich green leaves on the trees around them. In this county, I have the first case of "yellows" yet to see, which leads me to believe that there are causes exclusive of the yellows that advance the season of ripening of peaches, and though the fruit may color up, look well

and sell readily, I regard it extremely hazardous to the interests of Peach Growers, to attempt the establishment of *early* varieties upon such basis. "Plowden's Seedling" *may* be a distinct variety, yet at one place we hear of it having a serrated leaf without glands; at another, serrated with glands. This truly is a variation that I have never seen in any other variety; be that as it may, I am not yet ready to accept the belief that we have a good market variety, free from rot as Troth's Early, and ripening "two or three weeks earlier than Hale's."

SMALL FRUITS.

In a previous number we had a few words to say upon the general treatment of the *Raspberry*. We would now revert to the subject of the culture of small fruits generally, as we think our agriculturists do not pay the attention to this subject which it deserves.

We very rarely see a farmer's garden in even tolerable condition, whether of fruits or vegetables. As to the flower garden, well, don't mention it! We think it would be well to ask ourselves if this ought so to be. But, however, to the subject. If Raspberries were well cleaned and mulched a month or six weeks ago, the hot, dry spell will have had very little effect upon them; and little attention is now necessary, except to keep down suckers, &c., so that the stools have to grow only those canes necessary for next year's fruiting. Prevent the canes growing too tall by pinching out the points; and any laterals making too much growth, serve in the same manner. These remarks of course do not apply to the varieties which do not sucker.

Red and also white *Currants* should be pruned in the summer, if we would have plenty of fruit of the largest size and the best quality. Our rule is to take out all wood which has borne fruit for two successive years, replacing it with young wood, that being the most productive, by far, of fine fruit. There are those who prefer to spur-prune their currant bushes, and obtain very good crops of fruit by that system. We are, however, far less desirous to enunciate this or that particular system, than to awaken an interest in the matter with our farmers, as we have generally found that, although the usual plea for neglect in these things is want of time, the fact is more frequently lack of interest. It occupies very little time indeed to attend to these things, if they are done at the proper season. To illustrate this fact we have gone through the whole of the small fruit bushes in a farmer's garden during the time the horses were eating at noon.

Change of work is sometimes as good as play, and if it did occupy a little time occasionally to keep the surroundings in a little better condition than it is usual to see them, we doubt very much if it would be time thrown away.

We think the sons of every farmer should be able to bud and graft, and should also be taught how wide a difference there is in trees of the same variety of fruit, as to fruitfulness, &c., so that they may know how to choose their scions, &c. Nor do we think it would be a sin to show country boys, and girls too, that there are flowers classed respectively as annuals, biennials, perennials, &c.; also that some flowers have tuberous and others bulbous roots, and that a sufficient quantity of each, for a start, might be purchased for a mere trifle at any first class seed house, with instruction for their management. "To plow and sow, and reap and mow, and be a farmer's boy," is as correctly descriptive of the life of a very large proportion of our farmers now as when the song was first sung. The old ditty should have been practically cast into the blackest oblivion years ago. We hear it said, "our farmers' sons all run away to the city as soon as possible;" and philosophers write page upon page to explain *why* it is so. Why? We have boarded at farm-houses ere this, from which anything on earth or ocean would have skedaddled. Such a —— well, well! we go for the good time coming, boys —let's see if we cannot make things pleasant, comfortable, enjoyable, along with the old folks at home! N. F. F.

Skill in Cultivating Fruit Trees.

Mr. Conrad Ruber, of Philadelphia, who gives considerable attention to training trees in Espalier and other forms, writes:—

"The principle of cultivating trees has not been properly studied in this and many other States of America, and the attention which they require has been to a great extent neglected, simply because not thoroughly understood, hence it has found but few admirers and little favor with the public, and produced a prejudice that a good result could not be obtained. Less than twenty years ago, the same idea prevailed in most parts of Europe, but the problem has been happily solved, and there exists now in Germany and France, a universal sentiment that there is a principle—a proper law—governing the transplanting and cultivating of trees, grapevines, flowers, shrubs, etc. In most of the large cities of Europe, there are Institutions where this principle or law is made a special study, where gardeners, botanists and nurserymen are educated in this noble and beautiful science and art. Scarcely any family of *note* or *wealth* will employ a gardener who has not a thorough education, both practical and theoretical, and has not made himself master of his profession. There is not a fence, a hedge or wall, whose top is not adorned with the choicest fruit trees of every species. The trees become healthy, the fruit larger and of better quality by proper cultivation, and where the flow of sap is not hemmed. The spring cutting is not sufficient. Trees must be attended to during the summer and fall, which if the tree has been properly

planted, requires but little time. Of grape culture the same may be said. The cutting of grapevines and tieing to the arbor is not enough. They require more care to perfect the fruit. The climate has not so much to do with the production of good grapes, as the care in cultivating the vine. For transplanting of trees, grapevines, etc, the fall season is the best, because the earth contracts and adheres closer to the fibres of the roots, and keeps them in a better condition. They grow faster, and are healthier than those planted in the spring."

Vegetable Garden—Work for August.

In this month in this latitude the garden yields a varied and continuous supply of healthful vegetable food. Keep the soil clean and frequently stirred and the weeds in constant subjection.

Asparagus beds should be kept hoed and clean and a dressing of manure is excellent now. *Beans.*—Early bush kinds may be planted for late use or for winter. Limas should be pinched off when they get to the top of the poles, which should not be over six or eight feet high. *Beets, Carrots* and *Parsnips* should be kept hoed and thinned out. *Cabbages* and *Cauliflowers*, keep hoed and look out for caterpillars. *Celery* for late crop may be set out in rich and well prepared soil. Keep the ground well stirred. *Corn* must be kept hoed and clean. *Cucumbers* should be hoed around until the vines cover the ground. *Egg-Plants.*—Cultivate well and occasionally give liquid manure. Straw or slates put under the fruit preserves it from rotting where it touches the ground. *Herbs* of all kinds should be cut just as they come into flower, and dried in the shade. *Melons* are improved by picking off the vines such as will not mature. As the fruit ripens turn occasionally and put something under it to prevent contact with the earth. *Onions* should be gathered as soon as fit to be pulled, which is indicated by the falling over of the tops. Before storing away they should be dried, and not put in too thickly or in a close warm place. *Sweet Potatoes* must be kept clean until the ground is covered by the vines Do not allow the vines to take root. *Squashes* must be watched close for destructive insect pests. Allow the vines to root at the joints. *Tomatoes.*—Keep well tied up to the trellises, if used, or supplied with brush to run on where that plan is adopted. Look out for the green worm, the ravages of which are sometimes very sudden and disastrous. *Turnips* may be sown, and ruta-bagas must be thinned and hoed The fly may be kept under by frequent dustings of lime, ashes or plaster.

HALE'S EARLY PEACH.—An intelligent fruit grower informs us that in Nansemond Co., Va., this variety, *allowed to grow up in grass and weeds*, matures its fruit and is as free from rot as any other.

The Poultry Yard.

Best Varieties of Fowls.

We have already given, from good authorities, a description of a number of the best varieties of Fowls, and will make some additions to the list:—

Dominique Fowls.—The London *Field* says of this variety, which it denominates American:

There are two or three useful and good breeds of poultry that are not well known in England. One of the oldest established, and certainly one of the most useful, is the Dominique. This breed more closely resembles our Cuckoo Dorking than any other English variety. It differs, however, in having only four toes—a great advantage, by the way, in a practical point of view—and in the legs being yellow. Each feather is of a light gray, barred across with darker slaty blue bars or pencilings. The Dominique cocks are showy birds, with full saddles and hackles, and abundant well matched sickle feathers. They should weigh from six to eight pounds when mature. As table fowls, they should necessarily be short legged, full chested, and broad in the back. The ear lobe should be red, and the wattles and comb neat; the former of medium size. The merits of this breed will recommend them to persons residing in the country, as well worthy of promotion in the poultry yard, whether as makers of eggs, or of meat; as sitters, or nurses, they are invaluable.

Plymouth Rocks.—The *Poultry World* gives the following description and history of this breed: This beautiful fowl is purely an American breed in its 'make up,' though produced by a cross of the Cochin China with the Black Java, and their progeny with the English Gray Dorking, and were first introduced and shown as Plymouth Rocks at the New England Poultry Club Exhibition, held in Worcester, Mass., 1869, where they were greatly admired, and by many called *the* fowls of the show.

The pure breed are *single combed*, with large square, compactly-built bodies, and are of very handsome plumage.

Color of cock, dark or light steel gray *all over*, and free from splashes of *red, white*, or *black* feathers in any part of plumage; legs short, stout, and bony, perfectly free from feathers, and bright yellow in color.

Color of hen, dark steel, each feather *barred* across, alternately, with black and white bar, evenly marked *all over* as possible up to bill; having small single comb, perfectly straight with small serratures; legs free from feathers and bright yellow—are good layers summer and winter. Pullets will lay at five months old if well cared for; hardy and easy to raise; fledging quite young; making excellent broilers at two months old; will weigh, matured,

cocks, 10 to 13 lbs., hens, 7 to 10 lbs., and are not excelled for market purposes.

Derby Games.—Mr J. F. Campion, in the Cultivator, thus describes this breed, which will show a very wide and distinct difference from all other game fowls. The full blood Derby is hard to get, many of those imported being only half or one-third, being hard to obtain in England:

In the first place they are of a peculiar color, between a black breasted red and ginger. The cock has mostly a pure black breast, the body, dark maroon, the hackle, golden orange. The flight feathers are a cinnamon shade with always one white feather—there is a blue-black bar on the wing as in Black Reds; the tail is black and carried high and has a tuft of fluffy feathers at the base, which shows some white or greyish tint; the neck is long, throat very small, head rather large; the beak strong, large, and point white. They have always white legs; any other shade shows a cross at no remote period. In size they are smaller than average games, especially the hen; the leg of the cock is long, thigh short, the heel frequently turned very much inward, the toe long and having a white nail. The hen is the most beautiful color of all games, I may say of all fowls; back is of a red-brown; hackle, golden with black marks; breast, salmon-tinted brown, fluff-brown grey; tail, brown-black and mostly carried like a fan; the wing also shows a white feather; the body is very round and compact, feathers extremely hard and oval, which always gives them a glossy and neat appearance; faces of both are red.

Their quality is purity of blood and beauty; their use the same as blooded cattle or horses, to improve more common stock. A cross with a Black Breasted Red or Brown Red brings one of the best game fowls known, being large, handsome and of great courage. The cock is mostly used in crossing, because it is thought best to have the male small rather than the female, in order to improve and get well formed birds. In this cross the hens should be only kept to breed from, and a full blood cock.

What Fowls to Keep.—Committee appointed by the Farmers' Club of New York, to visit the poultry show, and report what breed of poultry to keep, made a report to the club, of which the following is the substance:

What breeds are at present most prized? A. Different breeders disagree, but it is at present thought that the majority prefer the Houdans, dark and light Brahmas, and Leghorns.

Are pure breeds preferable? A. The pure breeds are better than half-breeds, as layers, but not quite so hardy.

What fowls are best layers? A. White Leghorns and Aylesbury ducks.

Which grow fastest and make most dressed meat? A. Creve Cœurs, light and dark Brahmas, and Aylesbury ducks.

For eggs and flesh both, which are the best? A. Houdans.

For flavor and tenderness of flesh, which breeds excel? A. Houdans, Dorking or Game, and Rouen ducks.

For mothers, which have you found best? A. Game and Dorking.

Is the Dorking hardy in climate? A. No.

What feeding and range do you recommend? A. Ground feed in the morning, mixed with warm water, whole grain at night, a little meat occasionally in the winter, with some broken oyster shells, all the range possible, and a good, warm house, are all that is necessary.

What is your opinion of poultry raising on a large scale? A. It can be done with great profit if the ground and houses are large enough. Every hundred fowls should have at least an acre.

The Dairy.

Associated Butter Dairy.

We recently published from a correspondent of our own, a descrip ion of the Butter Dairies of N. York. The importance we attach to the introduction of these *institutions*, and the hope of seeing them common in this and the states South of us, must be our apology for so frequently alluding to the subject.

A convention met at Mayville, Chautauqua Co., N. Y., on 23d April, for the purpose of forming an association for the making of butter, similar to those so succe sfully established for the production of Cheese. We learn from a correspondent of the Country Gentleman that Mr. O. C. Blodgett, of that county, delivered a short address, stating the reasons why the meeting had been called and the necessity of an association. Among other reasons, he said that in this county alone there are in round numbers 50,000 cows; that in the adjoining counties of Pennsylvania, which would join the organization, there are 200,000 cows; that estimating for each 25 cows, $10,000 invested in land and improvements, the total value of the property invested in the dairy business in the territory named is $100,000,000. He said that cheese-makers are far in advance of butter-makers, producing a more uniform article and getting a better average market price, but that butter-makers can attain the same success. At least $20,000 will be invested in Chautauqua county alone, this year, for new and comparatively untried improvements (so claimed) in machinery for the dairy. But a butter-maker's association, a meeting of dairymen once a month, will enable us, by the aid of free discussion, to

be much less liable to loss from patented machinery. One thing still to be learned, is, how to keep the temperature of the milk down in hot weather, so as to get the greatest possible amount of cream—and only an interchange of opinions and comparison of experiments will give us the required information. He said the standard of our butter should be brought up to the quality of the very best. He defined a dairyman as "a *man*, with the knowledge of nearly all the laws of nature added." There are two ways of attaining a knowledge of the best methods of making butter—one by forming an association for free discussion, the other by having an experimental farm devoted to dairying and conducted at the expense of the State; but legislation is usually not very favorable to producers, and therefore the first is only the practicable method.

Mr. Blodgett's address was well received, and, in accordance with his suggestion, an association was organized under the name of the "Western New-York Butter-Makers' Association and Farmers' Club," with officers as follows: Alex. Morian, President; C. E. Benton, Recording Secretary; O. C. Blodgett, Fredonia, N. Y., Corresponding Secretary; with Vice Presidents in the different towns in Chautauqua county, and in Cattaraugus, Jefferson, Ontario and Yates counties in this State; in Erie and Crawford counties in Pennsylvania, and in the Province of Ontario, Canada.

The Apiary.

Natural History of the Bee.

From an essay on Bee Culture, by S P. Landers, Esq., read at a meeting of the Clinton, N. Y., "Rural Art Association," and published in the *Utica Herald*, we extract the following:—

To the naturalist and to every curious observer a hive of bees, in its best working condition, presents a scene of the most lively interest.

In a perfect hive of bees there are three kinds, viz. "The Queen," the mother of the whole colony, "The Worker," the producer, of the neuter gender, and "The drones," the male bees, who take up room in the hive but bring in no honey.

The Queen is a fully developed female, while the workers are females imperfectly developed.

The queen is impregnated by copulating but once with the drone while on the wing, high up in the air, and in forty-six hours after her fecundation, all things being right, she begins to lay eggs, and, it is stated by those who profess to know, that she is capable of laying 2,000 eggs in twenty-four hours. In the time of Huber, a blind Swiss naturalist of great celebrity, it was supposed that the ovaries of the queen contained regular succession of the different kinds of eggs necessary to produce the three kinds of bees we find in a hive. He made an experiment which proved to him that if the hive contained no drone comb, the queen dropped her male eggs at random and no males were reared, and so if there was no worker comb she dropped her worker eggs anywhere and no workers were produced.

But it is now the received idea that the eggs of the queen are all alike, and that it is only the different kinds of cells in which they are laid, and the different kinds of food and treatment they receive in their embryo state, that make the three kinds of bees. All eggs deposited by the queen in drone cells become drones, and the same is true of the worker and the queen. The queen has a sting which she only uses to sting another queen. She lives four or five years if no accident happens to her, but in the after part of her life, like an old hen, ceases to be fertile.

The instinct of the workers teaches, then, the necessity of having a queen that will lay eggs so as to keep their numbers good, and they prepare to raise another queen to take her place. This they do by building a queen cell, and if, when the cell is about half done, the queen does not deposit an egg in it, they take an egg from the worker cell and put it into it, and by feeding the embryo queen with royal food, and, perhaps by some other process only known to themselves, the egg that would have been a worker if it had remained in a worker cell, becomes a queen.

The Drone is the male bee and has no sting—no means of gathering honey or secreting wax, or doing any work necessary to their own support or the common good of the colony. Like some in human society, they are non-producers, and live by others' toil and industry.

The Workers are imperfectly developed females, and they do all the work that is done in the hive. They secrete the wax, they build the comb, gather the pollen for the young, and the honey for all, feed and rear the brood, and fight all the battles necessary to defend the colony against harm.

Bee Hives are of multiplicity of patterns. There are more patent bee-hives, if possible, than there are of patent churns and washing-machines, and ninety-nine out of every hundred of them are no better, if as good, as the common box and gum hive. It is generally conceded by all bee keepers that the movable comb hive in some form is essential to successful apiculture. The first inventor of the movable frame hive is Francois Huber, a Swiss naturalist and bee keeper of wonderful enthusiasm in this subject, who was born in 1750. This kind of hive gives the bee-keeper an opportunity to examine his stocks at will, and if they have lost their queen, or if any other trouble is among them, to know what it is and to remedy it at once. And then it frequently happens that some stocks have more honey than they need, while others have

not enough to carry them through the winter safely. In such cases all that is necessary is to take from the full hive and give to the one that is deficient. And then again, this hive gives the bee-keeper the advantage of artificial swarming. The golden rule in bee-keeping is to keep your stocks strong, and the movable frame hive is the only effectual way of doing it. In a word, this kind of hive gives the bee-keeper full control of his bees.

The Florist.

Floriculture, &c.—August, 1872.

By W. D. Brackenridge, Florist and Nurseryman, Govanstown, Baltimore county, Md.

In the greenhouse department, much labor is not necessary at this season; that which demands the most careful attention, is to see that the plants in pots do not suffer from want of water at the roots, and in the evening syringing the tops freely in dry weather, so as to keep down Red Spiders and other insects.

Towards the end of the month, many hard wooded plants may be shifted with safety into larger pots, and in the performance of this work, select a cool shady place, where you can safely examine the condition of the roots, as in many cases they will have become so matted around the edge of the ball, as to require them to be cut away, while the points of others will have to be straightened out, so they may better enter the new mass of earth; should any of the balls be found dry in the centre, soak such in a bucket of water until the whole becomes wetted through before returning them to the pots.

It is not too late to sow seeds of Cinerarias, Sweet Alyssum, Chinese Primroses, Wallflower, and if you please, a little Mignonette for winter bloom. Chrysanthemums and Stevias will flower stronger and better, by being watered once or twice every week with liquid manure water, pinching back all straggling branches so as to form bushy plants, and where necessary, shift into larger pots before the roots become matted.

Cuttings of Pelargoniums and Geraniums will strike well now in the open air; by choosing a sheltered situation, we save a great deal of labor by adopting this plan, where plants will be formed ready to place in pots a few weeks after the cuttings have been put in.

Flower Garden and Pleasure Grounds.

Unfortunately for those who delight in rural summer retreats, and take delight in Flora's offerings, the months of July and August are meagre in trees and shrubs which produce their flowers at that period; this lack does not arise because the necessary articles are unattainable, but rather that attention has not been drawn to them, and to this end we will here enumerate a few, promising to enlarge the list at no very distant date. As shrubs we have first the *Clethera ulnifolia*, whose flowers are white and fragrant, height of bush 4 to 6 feet. Then there is the free growing *Vitix Agnus Castus*, better known as the Chaste Tree, and of which there are two varieties, one of them blue and the other pale lilac, both of which should be in every collection of any pretension. *Hydrangea quercifolia*, has large branches of greenish-white flowers, and lobed leaves like those of an Oak, and is a conspicuous and well marked article, and so is its congener *H. nivea*, with white flowers and entire leaves, which are green on the upper and snow white on the under surface—both attain a height of 3 to 5 feet. *Buddlea Lindleyana* which grows from 6 to 8 feet high, is a very desirable bush, and should be more planted, producing as it does during most of the summer months its long pendant spikes of blue flowers which come admirably into play, when making up a table boquet; to this we would add another beauty, viz: *Ceanothus thyrsiflora*, bearing flowers like an Ostrich feather of a pale blue color. *Spirœa callosa*, *S. callosa alba*, the first bearing pink and the latter white flowers, deserve a place here as well as in every garden.

Belonging to the small tree kind, we recommend *Kolreuteria paniculata*, or Balloon tree, as some people call it, which bears yellow blossoms on long erect spikes; and as a suitable companion to this plant *Lagerstremeria indica*, of which there are three or four varieties, one bearing pink, another purple, and a third bearing scarlet flowers; we have also got the white flowering kind, but cannot vouch for the latter proving hardy; in truth, all of the varieties require protection during the winter north of Baltimore, yet there is no plant that will better repay a little care than this same *Crape myrtle*. The Althea is a very popular tree or bush, and it embraces a great many varieties both, single and double flowered; to have these to bloom at the present season they should be headed down or cut back late in April; but apart from the value of the flowers, there are two or three kinds very attractive by their variegated foliage, which latter feature in floricultural productions has of late years claimed more prominence than we think it deserves. While bringing forward to the light the above desirable trees and shrubs, we would with great respect remember as seasonable the Virginia and Chinese Trumpet flower, the first so well adapted to cover stumps of trees or old walls gone into decay, the last just the thing to plant against a Summer House, or as a solitary bush on a lawn, where its robust growth will soon produce a stem strong enough to support its head erect.

W. D. B.

A new plan of growing the Wisteria is to train it to a stake, six feet high, and when it reaches the top, head it off. The second year, or the third, it will support itself and form an umbrella-shaped head, with hanging flowers.

Grape Culture.

Domestic Wine-Making from Grapes.

I send you, for the information of beginners, a few simple directions for making wine from the grape:

After the bunches are gathered, pick off all the rotten (but not the green) berries, wash the bunches in clean water, to get rid of dust and insects, and throw them in a tub, or box, with a hole in the bottom for the water to drip off and escape. Mash them in an *oaken* tub, with an oak crusher, or pestle, taking care to break as few seed as possible. But few grapes can be mashed at a time, on account of the juice. Have an empty cask, or oaken barrel, well soaked for several days, place a spile near the bottom to draw off the grape juice; place the cask or barrel in a cool place, upon a platform, and as the grapes are mashed put into the barrel, within six or eight inches of top; cover to keep out insects; allow it to ferment twenty-four hours; the longer it is allowed to ferment on the skins the more coloring matter will be extracted, and of course the redder the wine will be. (Nearly a white wine can be made of dark grapes by pressing as soon as mashed.) Draw off all the clear juice by the spile, which, if kept separate, will make a more delicious flavored wine; press out the juice, and add the best quality of sugar until an egg will float and show above the juice the size of a dime; put in jugs, kegs or barrels, filling full, so that impurities can work out; reserve some of the juice to fill up with. For the first two or three days fermentation will be very rapid, and the vessel must be filled up three or four times, then for a few days twice, then once until fermentation subsides to a simmer, at which time make a hole through the stopper, or bung, put in a peg loosely to allow the gas to escape. When the fermentation is over bung tight. Watch the barrel and stop leaks. A slight fermentation will take place the next spring; when the weather becomes cool in the fall it will generally be safe to bottle.

The wine maker must keep all vessels perfectly clean—pine or cypress barrels or tubs will impart the flavor of the wood to the wine. Use oak.

Persons making large quantities of wine may make it in a more scientific manner, but may not make a better wine.

Hoping the above may be of benefit to some one, I am, very respectfully, yours.

H. W. L. Lewis.

Remarks—To the above excellent article from the largest and one of the best practical wine makers in this section, we will add that although is is *desirable*, it is not *indispensable* that the grapes should be perfectly ripe in order to make good wine.—*Rural South Land.*

The Fireside.

Flowers.

Why do we love the flowers?
Sweet smiling things with beauty crowned,
They do bedeck the lowly ground
With charms possessed by them alone;
And yet they ask no regal throne,
But rear their meek and lowly p aces,
Look up with ever smiling faces,
And with their modest teachings chide
The foolish vaunt of mortal pride.
For this, we love the flowers!

Why do we love the flowers?
They yield unto the passing air
A fragrance which its wings may bear
To places where, their forms unseen,
They may no sounding plaudits glean;
And thus they teach the human mind
That it may highest pleasure find
In deeds of good, most meekly shown,
Leaving the bounteous hand unknown.
For this, we love the flowers!

Why do we love the flowers?
When winter's darkness glides away,
And summer opes its welcome ray,
Th n forth their simple leaflets spring
To catch the earliest glimmering;
And soon th ir eyes, all fresh and bright,
Unfold, and e'er seek the light;
And thus they teach that mortals, too,
The light of truth should e'er pursue.
For this, we love the flowers!

Why do we love the flowers?
When summer's light has pass'd away,
And rude blasts mark the wintry way,
When death's cold fingers chill the wind,
And fate seems resolute and blind;
Then, bending to the ruling One,
They meekly say, "Thy will be done!"
And drooping down without a sigh,
They teach mankind the way to die.
For this, we love the flowers!

The Seventeen Year Locusts.

The "locusts," as they are termed, make their appearance in the middle of the space of time allotted for a *generation*—therefore as many of the youth of the present day have to become personally acquainted with the characteristics of this singular insect, we will occupy the main portion of the space allotted to the "*Fireside*" department of the *Farmer*, with the following interesting facts, to enlighten them upon the subject. They are from the pen of an Entomologist, and originally appeared in a commercial journal of Kentucky.

The writer says that we call the *cicada septendecem* a locust; when in fact it is not a locust at all. The locust so often mentioned in the bible, and noted for its wide spread devastation, is a true grasshopper, and like the grasshopper of Kansas and Colorado, spreads over the fields as a devouring army. The French call all the grasshoppers *locusts*, and as nearly all the tribe have the same predatory habits, the name is doubtless proper enough.

Our locust—the cicada who is piping in our woods—is a very different individual.—

They are scarcely relatives. They don't even belong to the same order in the division of insects. The true locust belongs to the *orthoptera*, or straight winged insects; the cicada to the *hemiptera*, or half-winged, so called from the peculiar formation of their wings. The genius cicada is well marked, and any of its species is readily distinguished in any part of the world. Our seventeen-year sleeper seems to belong peculiarly to America. Of the four or five species found in Europe this is not one, and nowhere in the world do the cicadæ appear in such remarkable numbers as in this country.

Just now this singular visitor, which, as its name implies, comes forth but once in seventeen years, is making its unwelcome appearance in many neighborhoods, throughout Kentucky and adjoining states. Everybody wants to know what it is, and what that long sleep of seventeen years means. This has even puzzled our best naturalists, and the subject to-day requires a good deal of careful investigation. For a while this long interval in the appearance of the insect, was regarded as purely fabulous. It was found that the same locality was visited by these locusts, not merely once in seventeen years, but many times. It was found indeed that there was a regular recurrence of these periods, sometimes every three years, and sometimes every thirteen years. There was truth, as is frequently the case, in all these observations; for Mr. Riley has distinguished as a separate species the thirteen year set, while those of three years' growth, are probably also specifically different. It is equally true that various broods of the seventeen year species may inhabit the same place, thus giving rise to the opinion that their underground life is comparatively brief.

During a recent visit to Rock Springs, a few miles from Pewee Valley, we observed an orchard of young trees, planted within seventeen years, was entirely free from locusts, except where they had come from adjacent and older trees. Not a single pupa-shell was to be seen anywhere. Indeed, it was a proof positive that, on account of the spot having been an open field seventeen years ago, no grubs had taken refuge there. An older orchard was literally filled with them, and their shells could have been scraped together, by the bushel.

When more than half a generation has passed away since their previous appearance, it is not at all strange that locust years are forgotten, and dates become confused. But all these theories have settled down to one certain basis, and that is, that our cicada, whose acquaintance is being made all over the country, does live in the ground in a larval state for nearly seventeen years, preying upon the succulent roots of trees and plants, till just before its time to emerge from its hiding place. Then it becomes a pupa with rudimentary wings, and soon digs its way out of the ground, climbing upon the first object it meets with; usually the trunk of a tree. Here it hangs on, till at once the pupal covering splits along the back, and the full-grown cicada emerges into the open day. At first the wings and body are extremely delicate, and perfectly white, with the exception of a dark thoracic band. The eyes are of a bright red color. After a few hours exposure to the air and sunshine, the white gives place to a glossy black and a dusky brown, the latter color predominant.

In places infested with the cicadæ a few days after their first appearance, myriads may be seen on every tree, and the very air seems to be tremulous with their monotonous music. The sound made by the cicadæ is singularly mournful, and, on account of its being so constant, it becomes extremely irksome. The tone is not always uniform, but is varied occasionally by successive waves of sound, resembling a prolonged w-he-w. How the hundreds of millions of musicians, with their tiny instruments, can be so trained as to join in this long "whew" in perfect concert, will ever remain a mystery.

However pleasant this incessant monody may have been to the Greeks, as sung by their poets, we have never heard of anybody in these parts who had special love for it. It is doubtless all owing to a lack of classic taste.

The sound is produced by a drum-like appendage attached to the sides of the insect. A full complement of nerves and muscles serve the purpose of a drummer, producing a shrill noise individually; but a most monstrous, plaintive, wailing sound when all join in the grand chorus.

These miscalled locusts range pretty much all over the United States, from Massachusetts to Louisiana and the Rocky Mountains They have no particular tree for their habitation, but are found on all varieties alike. The destruction wrought by these pests is chiefly due to the wounds made upon the smaller branches of the trees by the ovipositor of the female, who makes numerous slits to the pith, and deposits therein her little white eggs, often as many as five or six hundred. Of course the distal end of the twig soon dies, and by the time the eggs are hatched, in about two weeks, that portion of it breaks off and falls to the ground. The newly-hatched cicada at once buries himself and takes up his underground residence, to emerge again when all the crowns of Europe shall have changed heads, and the magnates of to-day shall have been forgotten.

It has been frequently stated that the locusts destroy the leaves of trees, but this is a mistake, the only damage being done by the perforations of the ovipositor. There are also numerous stories about its poisoning persons with its sting, producing in some instances death. This is extremely doubtful. That the ovipositor is not furnished with a poison-sac has been fully demonstrated by comparative anatomists. The injury therefore could not be worse than the puncture made by a thorn or any other sharp instrument.

That they are poisonous when eaten by ani-

mals is likewise disproved, by the fact that they are daily devoured by hogs, fowls, and other animals, without the slightest inconvenience. The other day we saw a little black-and-tan eating them with the greatest avidity. They are never likely to be esteemed a delicacy by man, as is the case with their Eastern namesakes, where "locusts and wild honey" serve for "meat," for man and beasts, even to this day.

For the "A. Farmer"—by a Lady.

VISIT THE CORNERS.—Try it—see how much important information is to be gained. You will see winter's comforts, in shape of various useful articles, exposed to the scorching sun or the mould; summer's useful articles exposed to winter's storms; bags moulding, tools rusting and thrown down where last used, cellars musty and smelling anything but sweet! Don't imagine Biddy will trouble her conscience about the dark corners, musty jars or boxes in your closets—that Jim or Bill think of saving implements for their careless owners. Visit the corners, peep into feed boxes, stables, hen-houses, out-houses, and if you do so for the first time since the general spring cleaning, your nose will tell a tale that will astonish you. After a thorough airing and scraping, use fresh earth, fresh sand, scald places infested by insects with carbolic acid solution; use it scalding hot, dash it into the cracks. Do it yourself or stand and see it well done. Your own eyes and judgment will be required in this work. E. R. T.

Weymouth, July 16, 1872.

For the "A. Farmer"—by a Lady.

THE CHARACTER OF A WOMAN.—Every man of sense and refinement admires a woman, *as a woman;* when she steps out of this character, a thousand things that in their appropriate sphere would be admired, become disgusting and offensive. The appropriate character of a woman demands delicacy of appearance and manners, refinement of sentiment, gentleness of speech, modesty in feeling and action, a shrinking from notoriety and public gaze, aversion to all that is coarse and rude, an instinctive abhorrence of all that tends to impurity, either in principle or act. These are the traits which are admired and sought for in a woman.

BOW BELLS.

DOMESTIC RECIPES.

Furnished by a Lady for the American Farmer.

PINE APPLE MARMALADE.—Pare the pine-apples and take out all the eyes, then grate them and add to each pound of fruit ¾ of a pound of white sugar, and boil gently until it thickens and becomes clear.

TOMATO LILY.—Take one peck green tomatoes, cut them in slices and sprinkle with salt, put them in a jar and press them tight; let them remain over night. Next morning drain through a cullender, add to them 12 onions, sliced, ¼ ounce black pepper, a teaspoon of red pepper, 1 ounce mustard, ¼ lb. mustard seed, 1 lb. brown sugar, 1 ounce cloves, 1 ounce allspice. Put in a kettle, cover them with good vinegar and boil till tender.

MISS LEE'S NEW MODE OF PRESERVING PEACHES.—Pare, halve and weigh the peaches; put them in a preserving kettle of boiling water, and to six pounds of peaches, put a teaspoon full of soda or pearl-ash; let them boil one minute; then take them out and throw them in cold water; scrape off the black scum which adheres to the peaches; wipe and lay them on a dish; have the kettle cleaned, and put the peaches in layers with half their weight in sugar; they will not require any water; let them cook slowly at first, then boil till clear—when take them out and let the syrup boil till it becomes rich. The flavor of the peach is retained and they are not so sweet as in the old way.

SWEET PICKLED MANGOES.—Take mangoes of good size, cut a piece out of each side and extract the seed. Pour over them boiling water, in which salt and a piece of alum as big as a hickory nut have been dissolved. Repeat this every two days for a fortnight until they look green. Then put them in vinegar, to remain a fortnight or more to draw off the water. When they look green, prepare your dressing, which must be ¼ lb. of ginger, soaked, dried and sliced, ¼ lb. of horse-radish, scraped and dried, ¼ lb. of mustard seed, washed and dried, ¼ lb. garlic, ¼ lb. pepper, 1 oz. allspice, 1 oz. nutmeg, 1 oz. cloves, 1 oz. coriander seeds, 1 oz. celery seed, and 1 oz. turmeric. To these ingredients add sugar to suit the taste and nearly a tea-cup of sweet oil. Fill your mangoes with this mixture, replacing the pieces at the openings, and then tie a thread around the mangoes, place them in a stone jar, boil the vinegar with several pounds of brown sugar and pour it over the pickles.

COCOANUT CAKE.—One cup of butter; 2 cups sugar, 4 eggs; 1 teaspoon of soda, 2 of cream of tarta in a cup of milk; 1 grated cocoanut should be mixed with flour and the whites of the eggs beaten to a froth. Flour enough should be used to make it about as stiff as pound cake.

GOLD CAKE.—Yolks of 8 eggs, 4 cups of flour, 3 of sugar, 2 teaspoons of cream of tartar, 1 of soda, 1 cup of butter, 1 of milk.

CHOW-CHOW.—Take quarter of a peck of green tomatoes, the same quantity each of pickling beans and white onions; one dozen each of cucumbers and green peppers, one head of cabbage. Season to the taste with mustard, celery seed, and salt. Pour over these the best cider vinegar, sufficient to cover. Boil slowly for two hours, continually stirring, and add while hot two tablespoons of the finest salad oil.

THE WEATHER—THE CROPS.—During the past month, the weather has been almost unprecedently severe—the thermometer ranging high up in the 90's for several days in succession, causing many deaths by sunstroke, and a very great increase in the bills of mortality in the cities, more especially among children. And yet we have had during the month a great many showers of rain, and thunder storms; the rains were refreshing for the time being, and have very much aided the growing crops, especially the Corn and Potatoes, as also the Gardens, and the second crop of clover, but they have not been powerful enough, or continued to a sufficient extent, to be of much advantage to the springs and water courses; the long continued drought having reduced these to such an extent, as to make the situation not only inconvenient, but alarming; and in our own, as well as other cities, there is fear of a water famine, the sources of supply daily decreasing.

We adhere to our opinion that there will not be an average crop of wheat, although the quantity is good, as at the time of ripening the weather was very favorable for maturing the grain. In some of the Western states the product is said to be very good, but we question whether it is uniformly so. It is positively asserted by those well-informed (says the Germantown, Pa., Telegraph,) that the monthly requirements of Great Britain, up to the next harvest, will be fully one million quarters of grain, hence the lively interest exhibited at the grain-centres in the United States. In view of the above statement, there is only one source to which Great Britain has to resort to obtain the required amount of grain, and that is the Northwest and Western States. The new crop in England cannot possibly be harvested in a fit condition for use until the beginning of September, so that for two months to come, the British isles will have to depend on America for their daily bread, the crops in France, Russia and in other countries, not affording a surplus for export.

The Hay Crop is admitted on all hands to be a failure; not more than a half crop having been made. The Fruit crop of all kinds is a large one.

The July report of the Department of Agriculture figures up a good showing for the growing cotton crop. Only in four States is there less than an average, while in the States having the largest cotton area the standard is more than maintained. The corn crop is reported as occupying more than the average acreage.

BALTIMORE MARKETS, July 23.

Breadstuffs—Flour.—Howard St. Super, $4.50a5; do., common to fair Extra, $5.75a6.25; good to choice do., $7a7.75; do. Family, $8a9.50. Ohio and Indiana Super, $4.50a5.50; common to fair Extra, $5,75a6.25; do. good to choice do., $7a7.75; do. Family, $8a9. City Mills Super, $5a6; do. standard Extra, $7.50a8; do Rio brands do., $9; City fancy brands, $12a12.50.

Wheat.—Light receipts. Market steady. Good to choice white at 155a170 cents; good to prime red at 150a 165 cents; amber, 165a175 cents.

Corn.—Market dull; prices steady; Southern white, 78a79 cents; yellow, 63 cts.; Western white, 64a66 cts.; yellow, 61 cts; Western mixed, 59a59½ cents in Elevator. *Oats*—Western, 39a41 cents; new Southern 40 cts. *Rye*, 60a65 cents.

Cotton.—Sales of low middlihg at 21 cents. We quote middling Upland, 22 cents; good ordinary, 20 cents.

Hay and Straw.—Timothy, baled, per ton, $30a34; mixed, $26a28; Wheat Straw, $14a15; Rye Straw, $22a 24; Oat Straw, $22a24.

Mill Feed.—Brownstuff, City Mills, 19a20 cents; light Middlings, 28a30 cts.; heavy do., 45a55 cts.

Rice.—Carolina, 8½a9 cents; Rangoon, 7a7½ cents, currency, duty paid.

Salt.—Liverpool, $2.05a2 15; Ground Alum, $1.45a 1.50; Turks Island, 40a45 cts. per bushel.

Wool.—No change to report.

Live Stock—Beef Cattle.—Market active. We quote best on sale 6¾ cents, prices running down from that to 3 cents, most sales being at 5 to 6½ cents. *Hogs* are in good demand. Corn fed hogs bring 6½a6¾ cents, net; slop hogs, 6a6¼ cents, net. *Sheep*—Demand for good ones active. Fair to good Sheep, 4a4¾ cents; good to extra, 4¾a5¾ cents, gross. Lambs, $2a4. Stock Sheep in fair demand at $2a3.25 per head.

Provisions.—Bulk, rib Sides, 7¾ cents; Shoulders, 6 cents; clear rib Sides, 8 cents; Bacon Shoulders, 7 cts.; rib Sides, 8¾ cts.; clear rib Sides, 9 cents; Mess Pork, $14a14.25; Hams, 14a16 cts. Lard, 9¾a10¾ cts.

Molasses.—Muscovado, 32a34 cts.; Porto Rico, 35a55 cts. *Syrups*—Canton Sugar House, 17 cts. in hhds. and 21 cts. in bbls. Calvert Golden, 55a60 cts. Maryland, 48a50 cts. Baltimore, 35a40 cts.

Seeds.—Timothy, $3; Clover, $6.75; Orchard Grass, $2.50; Herds Grass, $1 25; Kentucky Blue Grass, $2.50.

Tobacco.—Receipts have increased very much with a brisk market and upward tendency. Maryland—frosted, $6a6.50; sound common, $7a7.50; middling, $9a10.50; good to fine brown, $11a13; fancy, $14a20; upper country, $7a25. Virginia—common lugs, $7.50a8.25; good lugs, $8 50; common leaf, $9a9.75; medium leaf, $10a 10.75; good to fine leaf, $11a12; Selections, $12.50a14 50.

Whiskey.—Western, 94 cents.

NEW ADVERTISEMENTS.

G. Dugdale & Co.—Wheat Fertilizer, Raw Bone Phos.
J. J. Turner & Co.—Ammoniated Bone Superphosphate.
" " "Excelsior."
John B. Russell—Agent for Lister Bros. Ground Bone.
R. Sinclair & Co.—Agricultural Implements, Seeds, &c.
Joshua Thomas—Mill Stones, Agricultural Implements.
John S. Reese & Co.—Soluble Pacific Guano.
W. L. Buckingham—"Farmer's Favorite" Grain Drill.
J. C. Durborow—Kirby Reapers and Mowers, &c.
J. Henry Giese—Grass Seeds, Cement and Plaster.
B. M. Rhodes & Co.—Rhodes' Superphosphate, &c.
Isaac Lynde—Choice Fowls.
E. K. Lester—Actual Business College.
Wm. Harris—Sportsmen's Goods.
F. K. Phœnix—Trees, Bulbs, &c.
T. W. Levering & Sons—Timothy Seed, Seed Wheat, &c.
Coe's Original Ammoniated Bone Phosphate.
Dr. Thos. P. Janes—Two Tracts of Land in Georgia.
American Farmer—Farm of 160 Acres near Annapolis.

"EXCELSIOR"

No. 1 PERUVIAN GUANO AND SOLUBLE PHOSPHATE.

BALTIMORE, July 19, 1872.

RESULT

Of Analysis of a sample of J. J. Turner & Co 's "Excelsior" presented to me:

Moisture (det. at 100° C).....	13.20
Organic and Volatile Matter	43.04
Capable of producing of Ammonia.....	6.37
Inorganic Earthy Matter.	43.76
	100.00
Containing of Soluble Phosphoric Acid.....	9.70
" Insoluble " "	7.64
Or Soluble Bone Phosphate of Lime.....	21.18
And Undecomposed Bone Phosphate of Lime.....	16.68

(Signed) G. A. LIEBIG, Ph. D.

BALTIMORE, July 22, 1872.

To the Farmers of Maryland and Virginia.

At the solicitation of some of our patrons, we had a sample drawn by a disinterested party from a number of bags of Excelsior from different parts of our present stock (some 12,000 bags, in warehouse, and representing our manufacture for 1872) and sent to Dr. G. A. Liebig, Chemist, of this city, who stands at the head of his profession in this country as an Analytical Chemist, and annex his report of its analysis, which, upon examination, will be found to conform in every particular to our assertions and representations by advertisements, during the past *fourteen years*, and will convince the intelligent farmer that "Excelsior" is the most uniform and concentrated fertilizer offered for sale. *Its quality cannot be improved*, and it is, as its name indicates, "*superior to all.*" To improve its mechanical condition we have, at great expense, introduced, this year, into our works, ingeniously constructed machinery for removing the quartz, stone and other extraneous matter from the Peruvian Guano, as imported and used in its preparation, and by its aid now prepare "Excelsior" in *fine, dry powder*, that it may be regularly drilled in any quantity, however small, per acre—a great saving to the farmer in the cost of his fertilizer, and insuring a regular and uniform growth of wheat.

In returning thanks for the liberal patronage extended to us in the past, we assure our friends and customers that we will spare no efforts to merit a continuance for the future.

J. J. TURNER & CO.,

aug-2t 42 W. PRATT STREET.

SAML. SANDS & SON'S

FARMERS & PLANTERS' AGENCY

FOR THE PURCHASE OF

Fertilizers, Imp'd Stock, Agl. Implements,

&c , &c. See advertisement in July No.

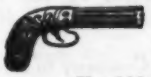
TREES, Bulbs, Hedge Plants, Seeds, Fruit and Flower Plates. Catalogues, 20 cts. F. K. PHŒNIX, Bloomington Nursery, Ill.

CHOICE FOWLS.

The advertiser has for sale DARK BRAHMAS, LIGHT BRAHMAS, BUFF COCHINS, PARTRIDGE COCHINS, WHITE LEGHORNS, and HOUDANS, at $4 per Pair or $6 per Trio. We Insure Fowls to reach the purchaser in good condition. Address

ISAAC LYNDE,
aug-3t Marlboro, Stark Co., Ohio.

William Harris,



GUNS AND PISTOLS,
With large assortment of
SPORTSMENS' GOODS.
Guns neatly Stocked and Repaired at

No. 116 PRATT STREET,
One door from South st., [aug-6t] BALTIMORE. MD.

ACTUAL BUSINESS COLLEGE,

Corner of Baltimore and Charles streets,
BALTIMORE, MD.

ACTUAL BUSINESS INSTRUCTION.

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The Oldest, the Largest and the BEST BUSINESS COLLEGE in America.

Upwards of 300 Students in daily attendance from the Middle and Southern States alone.

Our Illustrated College Journal, with Beautifully Flourished Eagle, sent by mail free of Charge.

ADDRESS—E. K. LOSIER, President, Baltimore, Md.
PROF. J. M. PHILLIPS,
aug-3t Supt. of Actual Business Dept.

FOR SALE OR EXCHANGE.

Two of the most desirable places in Central Georgia—both contiguous, and situated in Greene county, midway, between Augusta and Atlantic, on the Georgia Railroad—one containing 1680 acres, the other 1350 acres. Good improvements, good orchards, good water and plenty of it—convenient to churches, good schools and colleges, good society, and the best of markets for every thing. Perfectly healthy at all seasons of the year. Being desirous of living a few years in a locality where a system of high culture and improved husbandry is practised in order to afford my boys an opportunity of attaining a practical knowledge of farming proper, I hereby present a good opportunity for an advantageous exchange or purchase. For further particulars apply to

SAM'L. SANDS & SON, BALTIMORE,
or DR. THOMAS P. JANES,
aug. *Penfield, Greene Co , Georgia.*

FARM FOR SALE.

A very fertile and beautiful farm of 160 Acres, adjoining the city of Annapolis. Excellent location and soil for Fruit Growing or the Dairy Business, or for a Nursery. Extensive and valuable water front.

Apply at office of "AMERICAN FARMER,"
aug-tf BALTIMORE.

Pacific Guano Company's
SOLUBLE PACIFIC GUANO.

JOHN S. REESE & CO.,

No. 10 SOUTH STREET, BALTIMORE, MD.,

GENERAL AGENTS.

CAPITAL.....$1,000,000.

The use of this Guano since its introduction in 1864, and the annual increase of its consumption from a few hundred tons the first year of its use, to many thousands of tons, is the best attestation to its value as an efficient agent for the increase of the products of agricultural labor, as well as to the integrity of its production.

The large capital invested by this Company in this business, and its unusual facilities, enables it to furnish a fertilizer of the *highest excellence* at the *lowest cost* to consumers.

It is the policy of the Company to furnish the best fertilizer at the lowest price, and look to large sales and small profit for reasonable returns on Capital employed.

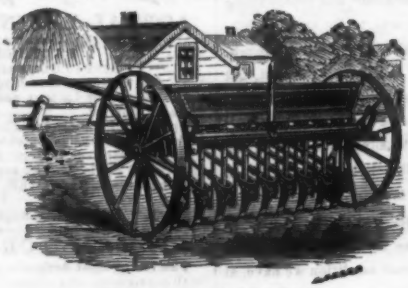
This Guano is sold by Agents of the Company in all the markets of the Middle, Southern and Gulf States.

Price in Baltimore $50 per Ton 2000 lbs.

aug-3t **JOHN S. REESE & CO.**

To insure a good crop of Wheat, Rye, Oats, Corn, &c., use the

'FARMER'S FAVORITE'



GRAIN DRILL,

WITH THE IMPROVED

GUANO ATTACHMENT AND GRASS SEED SOWER.

It was awarded the highest Premium,

A LARGE BRONZE MEDAL,

At the Field Trial of the

N. Y. State Agricultural Society, held at Utica, N. Y., Sep. 23, 1870,

In competition with most of the Leading Drills of the day.

☞ Call and get one of your nearest Agent, or send to

W. L. BUCKINGHAM, General Agent,

aug-1t **59½ S. Charles street, Baltimore, Md.**

To Wheat Growers.

EXCELSIOR,

1872

1872

Composed of 800 pounds of No. 1 Peruvian Guano, and 1200 pounds of Soluble Phosphate of Lime, (bones dissolved in sulphuric acid,) Potash and Soda,

Forming the most concentrated, universal and durable fertilizer ever offered to the farmers—combining all the stimulating properties of Peruvian Guano, and the ever durable properties of Ground Bones. Excelsior is in fine dry powder, prepared expressly for drilling, and can be applied in any quantity per acre, however small; and it is the opinion of many close calculating Farmers, after THIRTEEN years experience in testing it side by side with other popular fertilizers, that an application of 100 pounds of Excelsior is equal to 200 to 300 pounds of any other fertilizer or guano offered for sale, therefore is fully 100 to 200 per cent. cheaper.

Farmers should see that every Bag is branded as above, with the ANALYSIS and OUR NAME in RED LETTERS. All others are counterfeits.

PRICE $60 PER TON.

aug-1t **J. J. TURNER & CO., 42 Pratt street, Baltimore.**

FRENCH BURR, ESOPUS,

AND

OTHER MILL STONES,

Bolting Cloths, Leather and Gum Belting,

SMUT MACHINES, and MILL MACHINERY GENERALLY,

AT LOWEST MARKET RATES.

Parties in want of MILL FURNISHING GOODS will consult their interest by sending for my Price List before purchasing elsewhere.

ALSO, GENERAL AGENT FOR THE WORLD-RENOWNED

BUCKEYE Mower and Reaper, SWEEPSTAKES Thresher and Cleaner, Hagerstown Horse Rake, Grain Drills, &c. &c.

☞ Orders and correspondence solicited, which will receive prompt and careful attention.

JOSHUA THOMAS,

aug-3t **35 North street, Baltimore, Md.**

Seasonable Agricultural Implements & Machinery.

R. SINCLAIR & CO.,

62 LIGHT STREET,

BALTIMORE, MD.

MANUFACTURERS OF ALL KINDS OF

FARM MACHINERY

AND

Agricultural Implements

AND GROWERS AND IMPORTERS OF

GARDEN AND FIELD SEEDS, &c.,

Offer for sale a large stock of

LABOR-SAVING IMPLEMENTS AND MACHINERY,

Including in part, as particularly suitable for the coming season:

"Geiser" Thrasher and Separator,
"Westinghouse" Thrasher and Separator,
Sinclair's Thrashers and Straw Carriers,
Pelton Horse Powers, different sizes,
Wheat Fans, different sizes and kinds,
Sinclair's Patent Hay, Straw & Fodder Cutters,
Sinclair's Patent Masticators for do.
Reading's Patent Horse Power Corn Shellers,
with and without Cleaner,
Sinclair's Double and Single Shellers for Hand Power,
Scully's Celebrated Cider and Wine Mill and Press,
the best Mill in use,
"Philadelphia" Lawn Mowers for Hand and Horse Power,
Sinclair & Co's Patent Clover Seed Gatherer or Header,
Hay Presses, different kinds and sizes,
Nellis' Patent Harpoon Horse Hay Fork,
Ox Yokes, Churns, different kinds,
Grist Mills, made with either Stone or Iron Burrs,
Corn and Cob Crushers,
Bill Hooks, Brier Hooks,
MATTOCKS, Picks, Grub Hoes, and a large assortment of Horticultural Tools and Hardware.

R. SINCLAIR & CO.,

aug-3t **62 Light street, Baltimore**

JOHN C. DURBOROW,

GENERAL AGENT FOR

THE KIRBY MOWERS and REAPERS,

64
South Sharp st.,
NEAR PRATT,
Baltimore, Md.

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South Sharp st.,
NEAR PRATT,
Baltimore, Md.

I WOULD CALL THE ATTENTION OF THE FARMERS TO

The Kirby Combined Reaper and Mower

WITH ITS

Improved Baltimore Self-Rake,

The great success of which, this season, has fully sustained its superiority as a Self-Raking Combined Machine; also, to the great success of the Kirby Two-Wheel Mower, its admirable working having so increased the sale of this superior machine that the manufacturers were not able to supply the demand.

The Kirby Reaping and Mowing Machines

COMPRISE A COMPLETE VARIETY FROM WHICH

ALL CLASSES of Farmers can select Machines

BEST SUITED TO THEIR WANTS.

Manufactured only by D. M. OSBORNE & CO.,

AUBURN, N. Y.

ALSO, the celebrated BICKFORD and HUFFMAN continuous feed, double distributor Grain Drill, with improved guano attachment and grass seed sower, warranted the most perfect distributor of both coarse and fine grain manufactured.

In addition to the Reaper Agency I am prepared to furnish **PERUVIAN GUANO**, the different **SUPER-PHOSPHATES**, Ground Bone, Plaster and Lime.
Agricultural Implements of every description, **Plows, Plow Castings, &c.**

JOHN C. DURBOROW,
64 SOUTH SHARP STREET,
NEAR PRATT, BALTIMORE, MD.

aug-3t

RHODES' STANDARD FERTILIZERS.

RHODES' SUPER PHOSPHATE,

The Oldest and Longest Established STANDARD MANURE,
Packed in Strong Bags, 200 lbs. each, 10 to the Ton, $45 per Ton, Cash, in Baltimore.

SOLUBLE AMMONIATED SOUTH SEA GUANO.
Packed in Heavy Bags, 122 lbs. each, 11 to the Ton, $50 per Ton, Cash, in Baltimore.

ORCHILLA GUANO, AA, A TRUE BIRD GUANO,
Rich in Phosphates and Alkaline Salts. This Guano being sold at a very moderate price, enables Farmers to use liberally—say 300 to 500 pounds per acre, *high Manuring on fewer acres* being the most desirable mode of culture under our changed system of labor. Packed in Good Bags, 167 lbs. each, 12 to the Ton, $30 per Ton, Cash, in Balto.

ANALOGY BETWEEN ORCHILLA GUANO AND WHEAT.

The Analysis of the ash of Wheat and Straw shows:		ORCHILLA GUANO contains:	
Phosphate of Magnesia	12.46	Phosphate of Magnesia	11.57
Phosphate of Lime	49.31	Phosphate of Lime over	55.00

B. M. RHODES & CO.,
aug-2t OFFICE 82 SOUTH STREET, (below Corn Exchange,) BALTIMORE.

Timothy Seed, Seed Wheat, Clover, &c.

T. W. LEVERING & SONS,

Commission Merchants & Dealers in Field SEEDS,

55 COMMERCE STREET, Baltimore, Md.

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GENUINE ROSENDALE CEMENT.
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LARGE STOCK CONSTANTLY ON HAND.

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BONE PHOSPHATE,

So long and favorably known before the war, has again established himself in Baltimore. Having, through unavoidable circumstances, been compelled, since that time, to allow others to make this fertilizer, over which he has had no control, he is now again making the

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Fully up to the old standard, and has it on hand at

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Ammoniated Bone Super-Phosphate of Lime,

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Also, PERUVIAN GUANO.

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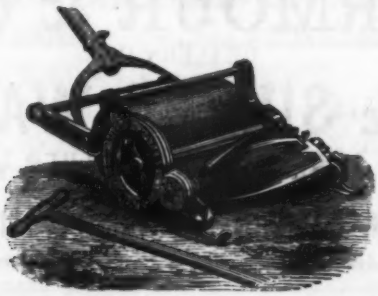

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Having largely increased my herd by recent purchases and importations, I am now prepared to fill orders for SHO THORNS of either sex. I am now using in my Herd the "Bates" Bull "Sixth Earl of Oxford" 9984; the pure Booth Bull "Royal Briton" (27,351); the Booth Bull "Lord Abraham" 11,223; the Princess Bull Lord Mayor 6,909. This gives me a combination of the best SHORTHORN blood in the world. I have Calves the get of Fourth Duke of Geneva 7,031; Plantagenet 8,795 Salamander 9,046, &c., &c., &c.

I also breed BERKSHIRE PIGS, and have some very superior young Pigs for sale. I can ship animals to any part of the country with ease, as my farm is on the Washington Branch of the Baltimore and Ohio Railroad, 15 miles from Washington and 25 miles from Baltimore, and all way trains stop directly at my place.

Royal Briton will serve a few cows other than my own at $250 each—no charge for keep. I shall be pleased to show the stock to all persons interested. Send for catalogue to

CHAS. E. COFFIN,
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FOR SALE.

I will sell the above BULL. He is Roan, calved April 25th, 1869. Bred by Mr. Torr, Aylesby Manor, England, and has four pure Booth crosses on a Usurer foundation. A sure getter, quick feeder, good handler, and with short fine boned legs. Price $1,500. Won five first premiums in 1871, in Maryland and Virginia.

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For further information apply to SAML. SANDS & SON, *American Farmer* office, or address,

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Carried on strictly as an Agency, and purchases made in most cases without charge to buyer.

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We are breeding and have for sale stock of the above description, and invite purchasers to communicate with us.

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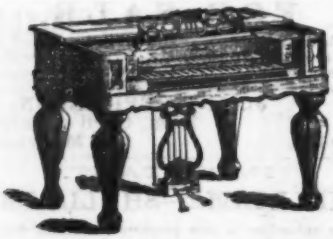

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We have constantly on hand

A No. 1 Peruvian, and

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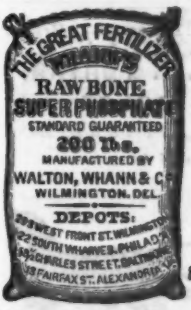

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Perfection in work and simplicity of construction have been attained in this Machine. It knits both circular and flat web with perfect selvage edge, making a perfect hand-stitch. It narrows and widens, knitting heels and toes of stockings to perfection, with ribbed or plain stitch, and is a Crocheting as well as Knitting Machine. It makes all the intricate fancy stitches of the crocheting-needle better than hand-work It is so simple that a child can operate it, and the rapidity of its work is truly wonderful—20 000 stitches per minute.

This Machine has carried the FIRST PRIZE at the Maryland State Fair, Maryland Institute, and Virginia State Fair, this Fall, and was the principal attraction at all of them. They are more valuable in the family than the Sewing Machine. Price, $25 and $35. Send for Circulars Agents wanted in every part of Maryland. Liberal terms. Address

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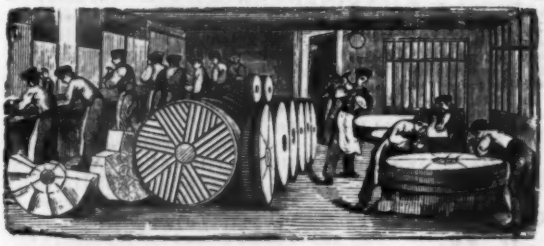

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These MACHINES are worked by HAND, HORSE, or STEAM POWER.
The Pots come from the mould complete, save the burning.
This *Machine* is the invention of a *Practical Potter of* 40 *years experience.*
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TURNIP SEED BY MAIL.

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$1,000 REWARD

For any case of Blind, Bleeding, Itching, or Ulcerated Piles that De Bing's Pile Remedy fails to cure.

It is prepared expressly to cure the Piles and nothing else, and has cured cases of over 20 years standing. For sale by all Druggists. Price $1 00.

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CELEBRATED BUCKEYE SELF-DISCHARGING STEEL TOOTH WHEEL

HORSE RAKE,
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General Agents for the New BUCKEYE STATE Reaper and Mower and the celebrated "WORLD" Enclosed Gear REAPER AND MOWER, with Droppers or Self-Rake Attachments; Tornado Thresher and Cleaner and Carey Horse Power; Bullard's Improved Hay Tedder, Hagerstown Grain and Fertilizer Drill, Cider and Wine Mills and Presses, &c.

FIELD and GARDEN SEEDS of every description; FRUIT and ORNAMENTAL TREES, GUANO, BONE, PLASTER and FERTILIZERS generally. All kinds of Machinery repaired at short notice and on reasonable terms.

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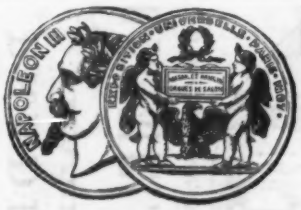

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I have on hand and ready for sale the largest and most varied assortment of CARRIAGES and SPRING WAGONS of any other house in the city, such as

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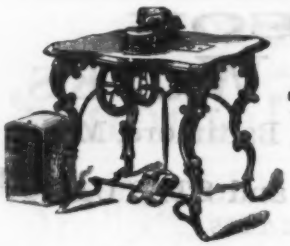

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THE FLORENCE SEWING MACHINE!

It is the only machine that can sew in more than one direction, having a reversible feed

It fastens the end of a seam better and quicker than a seamstress can.

We guarantee the "FLORENCE" will sew everything needed in a family, from the heaviest to the lightest fabric.

It will WEAR TWICE AS LONG as any other Shuttle Machine.

Price Circular will be sent free on application.

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BRADLEY'S PATENT ENAMEL PAINT,

The Most Economical, Beautiful and Durable.

THESE PAINTS are composed of PURE WHITE LEAD, ZINC AND LINSEED OIL, with other materials which add greatly to the durability, elasticity, beauty and strength of the Paint. The whole are chemically combined, so that the pigments are held in permanent solution, thus forming a new compound which dries upon the surface and adheres firmly to it, thus forming a smooth, glossy, firm, elastic, beautiful and *durable Paint.* The Oil, which is the real life of the Paint, cannot leave it and be absorbed by the substance to which it is applied, as it does in the paints mixed in the ordinary way, and thus leave the pigment dead and brittle, to wash and rub off in a few months, or at farthest in three or four years This paint is unaffected by changes of temperature, is perfectly impervious to the action of the water, is well adapted to all classes of work, and is in every way a better Paint for either INSIDE OR OUTSIDE WORK or BOAT PAINTING, than any other Paint known to the trade, and will last at least THREE TIMES AS LONG AS THE BEST LEAD AND OIL MIXED IN THE ORDINARY WAY.

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Would call special attention to the following first-class Machines, &c.:

Westlinghouse Threshers and Cleaners.

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Plows, Harrows, Cultivators, Straw Cutters, Corn Shellers, and all kinds of Farming Tools. Fresh Field and Garden Seeds, Pure Ground Bone and other Fertilizers.

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PORTABLE GAS! PORTABLE GAS!

Kuster's Non-Explosive Gaslight Fluid!

Cheapest, Safest and best Light in the World, giving a light equal to Coal Gas at the cost of one-half cent per hour! The lighting of CHURCHES, HALLS and STORES a SPECIALTY. The **Petroleum Fluid Stove** is found superior in the satisfactory and rapid manner in which it does its work—always ready and under momentary control. For Broiling Steak, Fish or Game it is unsurpassed. For Baking of Bread, Cakes and Pies, no oven with any other fuel in the world equals it. *Call and see for yourselves.*

C. F. KUSTER, { Successor to F. G. PALMER, and late U. S. Portable Gaslight Co.,

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PURE GROUND BONE.

For Sale at $45 per Ton, 2000 lbs., in Bags 200 lbs. each.

GUARANTEED PURE RAW BONE.

LIBERAL DISCOUNT TO DEALERS.

IMPORTANT.

RESULT of Analysis of a sample of BONE DUST taken by myself at the Warehouse from a lot of about 20 tons, marked "*Carbon Works Pure Ground Bone, Tiers & Co., Philadelphia.*

Moisture (det. at 100°)	6.704
Organic and vol. matter	37.039
Capable of producing of *Ammonia*	4.112
Inorganic earthy matter	56.257
Containing of Phosphoric Acid	21.533

Which is equal to 47.010 of *Bone-Phosphate of Lime.*

[Signed] G. A. LIEBIG.

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Our own Importation—High and Low Tests.

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Steam Engines & Boilers

Of all Sizes.

DAVID'S PATENT PULVERIZING MILLS, for Guanos, Bones and other hard substances.

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BOLTING CLOTHS, BELTING, SMUT MACHINES, ETC.

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WATCHES,

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SILVER AND PLATED WARE,

American, English and Swiss WATCHES,

For Gentlemen, Ladies and Youths.

GOLD, JET, TORTOISE SHELL, CORAL AND VULCANITE

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VIENNA LEATHER GOODS.

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THE LARGEST HOUSE IN THE CITY.

CANFIELD, BRO. & CO.,

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RIBBONS, MILLINERY & STRAW GOODS,

1872.

ALSO,

WHITE GOODS, EMBROIDERIES, &c.

ARMSTRONG, CATOR & CO.,

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Bonnet, Trimming, Neck and Sash RIBBONS, Velvet Ribbons, NECK TIES, Bonnet SILKS, SATINS, VELVETS and CRAPES, FLOWERS, FEATHERS, ORNAMENTS, FRAMES, &c.

Straw Bonnets and Ladies & Children's Hats, *trimmed and untrimmed.*

AND IN CONNECTING WAREROOMS

WHITE GOODS, LINENS, EMBROIDERIES,

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These goods are manufactured by us or bought for Cash direct from the European and American Manufacturers, embracing all the latest novelties, unequalled in variety and cheapness in any market. Orders filled with care, promptness and despatch. may-6t

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HIGHEST PREMIUM

Elastic Stitch

Shuttle Stitch

SEWING MACHINES

The Very Best in Use.

GROVER & BAKER'S

IMPROVED ELASTIC-STITCH

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Then apply all possible Tests to the

GROVER & BAKER,

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SEWING MACHINES.

Are FIRST-CLASS in every respect, and made in the most durable and substantial manner and furnished at a LOW PRICE.

Wherever they have been introduced they have been PREFERRED to all MACHINES of other Manufactures making the same stitch.

Try the ease and rapidity of motion. Apply the Machines to varieties of Sewing. Their capacity is without limit.

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Examine Their Simple Mechanism.

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FRUIT TREES for Fall Planting.

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ANALYTICAL AND CONSULTING CHEMIST, offers his services for the examination of FERTILIZERS, and FERTILIZING MATERIALS, ORES, MINERALS, and MINERAL WATERS. With an experience of sixteen years, part of which was in Europe, under Baron Liebig, he can guarantee accurate results. Facilities are offered to young gentlemen desiring to acquire a Chemical education equal to that of any European school.

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STANDARD
Cane Machinery,
For Sorgo and Sugar Cane.

The only recognized standards in Cane Machines are the
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VICTOR CANE MILL.
There are of these machines
Over 31,000 in use.
They have taken the
FIRST PREMIUMS AT 117 STATE FAIRS.
Send for Descriptive Catalogue and Price List.

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Manufacturers of Cane Mills and Evaporators, Farm, School and Church Bells, Buckeye Thresher, Feed Cutters, Corn Shellers, Corn and Cob Crushers, &c. jy-2t

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FORWARDED AND PACKED
WITH
GREAT CARE
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Importers of CHINA, GLASS, TABLE CUTLERY, FAMILY HARDWARE, PLATED GOODS, and Dealers in TIN, WOODEN and JAPANNED WARE and KITCHEN FURNITURE of every character.

WATER COOLERS of our own make. ICE-CREAM FREEZERS of the most approved kinds. PATENT ICE PITCHERS, all qualities, and each warranted to be as represented.

New and Beautiful Patterns of
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OF THE
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Over 6,000 Now in Use!!

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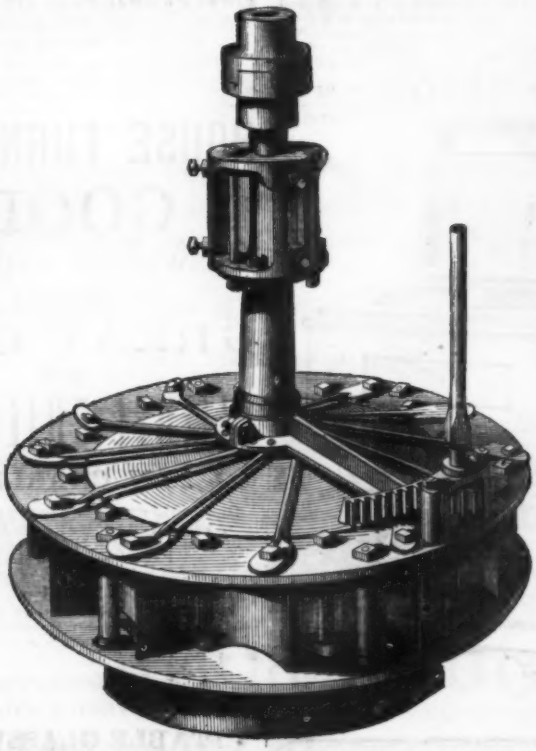
Manufacturers of Portable and Stationary

JAMES LEFFEL'S PATENT
AMERICAN DOUBLE TURBINE
WATER WHEEL,



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Patent Tubulous Steam Boilers,

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SHAFTING, PULLEYS AND HANGERS,

Machinery for White Lead Works and Oil Mills.

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Gentlemen: During my experience in Water Wheels, I have used ten different make of wheels; the last I put in were the James Leffel American Double Turbine Wheels. I am perfectly satisfied with them. They are giving me about double the power I ever had before, and less repairs than any of the others.

Respectfully, &c.,

(Signed,) J. W. STONEBRAKER.

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1872.

J. J. TURNER & CO'S

Ammoniated Bone Super-Phosphate,

Analysis.

Ammonia,	2.83
Soluble Phosphate of Lime,	29.51
Bone Phosphate of Lime,	10.67

Composed of the most concentrated materials, it is

Richer in Ammonia and Soluble Phosphates

THAN ANY OTHER FERTILIZER SOLD,

Except our "Excelsior," and is made with same care and supervision—uniform quality guaranteed. Fine and dry, in excellent order for drilling. Packed in bags.

PRICE $50 PER TON.

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Manufacturer's Agent for the sale of

LISTER BROTHERS'

GROUND BONE,

BONE MEAL,

DISSOLVED BONE,

AND

BONE FLOUR,

IN BARRELS OR BAGS. FOR SALE WHOLESALE OR RETAIL.

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Fair Dealing!

DUGDALE'S WHEAT FERTILIZER!

A SPECIFIC FOR THE WHEAT CROP.

MADE FROM

Dissolved Bones, Peruvian Guano and Potash.

GUARANTEED ANALYSIS.

Ammonia,	4.85
Soluble Bone Phosphate,	17.33
Bone Phosphate,	2.31
Potash,	7.55

Dry and Fine for Drilling. Packed in Bags 200 lbs. each.

PRICE IN BALTIMORE,

$58 per ton.

EXCELLENZA SOLUBLE PHOSPHATE.

ALWAYS RELIABLE! GOOD FOR ALL CROPS!

GUARANTEED ANALYSIS.

Ammonia,	2.65
Soluble Bone Phosphate,	23.60
Bone Phosphate,	2.01

Packed in Bags 200 lbs. each. In Good Order for Drilling.

Price in Baltimore $50 per ton.

BAUGH'S RAW BONE PHOSPHATE,

THE OLD ESTABLISHED FERTILIZER.

PURE GROUND RAW BONE, BONE MEAL, WESTERN BONE DUST, and a general assortment of reliable FERTILIZERS, at Lowest Factory Rates. Very liberal offer to dealers.

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